

EnergyReporterPQA™

Energy Dashboard, Energy Reporting &
Cost Analysis Software

Version 5



www.electroind.com

User Manual
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EnergyReporterPQA™ Application Installation and Operation Manual Version 1.16

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1: Step 1 - Install the EnergyReporterPQA™ Application

1.1: Overview

The EnergyReporterPQA™ application is a fully customizable software application that lets you create and view an Energy dashboard, analyze costs, and automatically generate detailed Energy usage reports and usage bills using either the CommunicatorPQA™ application databases created by logged data in a meter or the HMIPQA™ application's polling engine (see the *HMIPQA™ Application User Manual* and the *CommunicatorPQA™, MeterManagerPQA™, and EnergyPQA.com™ Software User Manual* for additional information on these applications). The EnergyReporterPQA™ application was created for use with Electro Industries' Shark® 200/200S/250/270 meters, the MP200™ metering system, and all Nexus® series meters. The EnergyReporterPQA™ application performs complex calculations, such as multiple entity aggregation, and supports user-programmable rate and tariff structures. This robust application allows for generation, transmission, distribution, and tax charges, and can be used for steam and other commodities as well as electrical billing. It also supports detailed usage analysis in the form of usage reports and trending charts.

The EnergyReporterPQA™ application has three parts:

- **Settings Editor:** the part of the application you use to set up billing, including customer and location configuration, data import, rate configuration, and correcting errors in the imported data.
- **Dashboard Viewer:** the part of the application you use to view the Energy dashboard, generate and view bills, view and analyze usage data, and generate and view usage reports.
- **Database Server:** the part of the application that provides secure access to the billing database.

The EnergyReporterPQA™ application adheres to the login security established in the MeterManagerPQA™ application. Once security is enabled in the MeterManagerPQA™ application, you can only access the EnergyReporterPQA™ application through the login process - you will be required to log in to the Settings Editor and Dashboard Viewer.

- Logging in as admin gives you full access to all EnergyReporterPQA™ features.
- The admin can create additional users with specific roles for either updating Provider, Customer, Location, Rates, and all configurable aspects of EnergyReporterPQA™, or for only viewing settings and reports.
- Adding and updating users is only available using the MeterManagerPQA™ application. EnergyReporterPQA™ will use the login credentials that were configured in the MeterManager Security Editor (see Chapter 18 in the *CommunicatorPQA™*, *MeterManager PQA™*, and *EnergyPQA™ Software User Manual*, for instructions on setting up security). You will be required to enter your username and password when initializing the Settings Editor and Dashboard Viewer. The login profiles for MeterManagerPQA™, the Settings Editor, and the Dashboard Viewer are independent of each other - you don't have to log in with the same username/password. If security is disabled, no login is required.

The EnergyReporterPQA™ software supports:

- A custom CSV (comma separated values) usage report that can be created for locations. This report can be automatically generated on a schedule, or manually generated. See 4.1: Set Up a Provider, on page 4-4, for instructions.
- Multiple simultaneous sessions of the software are supported.
- Up to 250 locations per customer and 2500 meters (total) are supported.



CAUTION! DO NOT EXCEED this number. Additionally, do not exceed 100 meters per location. The software will issue Warnings indicating that this is the maximum limit; i.e, 100 meters per location, 250 locations per customer, 2500 meters total.

1.2: Installing the EnergyReporterPQA™ Application

EnergyReporterPQA™ software is run as a standalone program on the same PC as is running MeterManagerPQA™.

IMPORTANT! The EnergyReporterPQA™ application utilizes the MeterManagerPQA™ automation component, which is installed as part of the CommunicatorPQA™ Professional application. You must have a licensed version of the CommunicatorPQA™ Professional software installed on the PC that will function as the Server. The shareware (LITE) version does not have the MeterManagerPQA™ automation component and will not work.

IMPORTANT UPGRADE NOTES:

- In the enhanced secure environment, the billing database is accessible only through the MeterManagerPQA™ application. Enhanced PostgreSQL database passwords are assigned during install or upgrade and cannot be changed. Other installed software such as PGAdmin, which may have previously accessed PostgreSQL, will no longer have access.
- Remote Server/Client access to Dashboard Viewer will no longer be available.

- Refer to the diagram below for a graphical representation of the way the software modules work together.

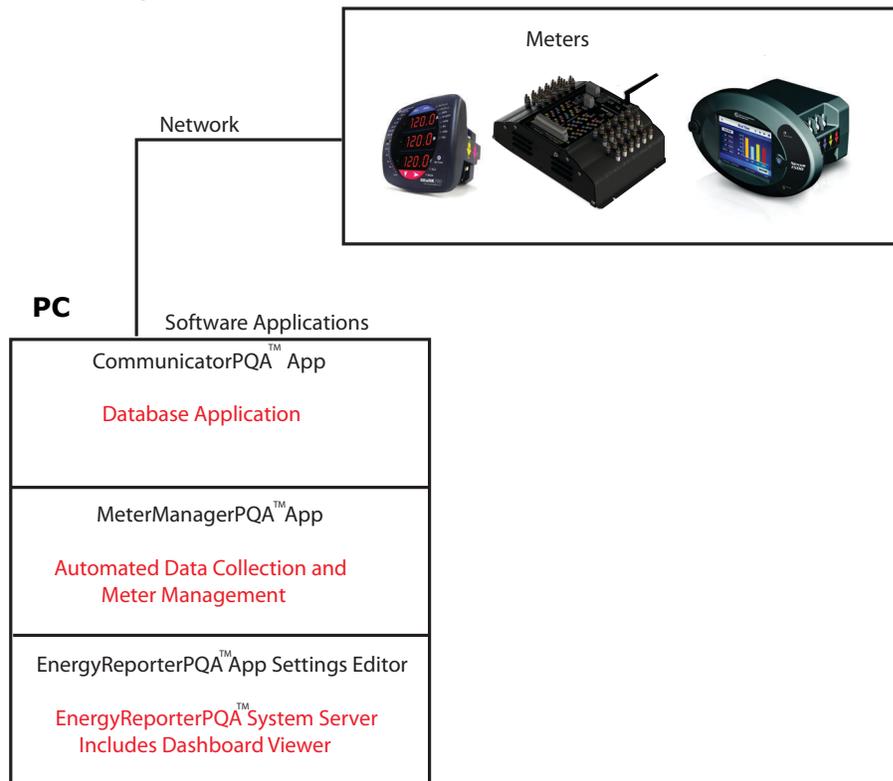


Figure 1.1: Relationship of Software Applications

1.2.1: Important Installation Requirements

This section gives the system resource requirements for full usage of the MeterManagerPQA™ and EnergyReporterPQA™ applications installed and run together, on a single computer. Recommendations for optimum usage are given. The MeterManagerPQA™ application is installed as part of the Professional version of the CommunicatorPQA™ software. It centralizes, groups, and provides easy access to all meters, automatically. It also acts as an App launcher, allowing a user to view data in real time, to view stored data, and to launch other EIG Energy Management applications, as needed. It specifically allows for automation of the log downloads which EnergyReporterPQA™ needs for usage reporting and billing.

Storage: The storage requirements for running and storing meter data and reports depends on a number of factors. The majority of these factors are affected by the number of meters in the system. Items that are stored consist of:

- Reports
- Meter Log Databases
- Retrieval Logs
- EnergyReporterPQA™ Application Databases
- Internal Logs

Storage requirements are given in the following table.

Meters	Locations	Years		
		1/12	1	5
10	1	23 MB	273 MB	1,365 MB
10	10	24 MB	282 MB	1,412 MB
100	10	195 MB	2,345 MB	11,727 MB
100	50	199 MB	2,387 MB	11,934 MB
100	100	203 MB	2,439 MB	12,193 MB
500	10	960 MB	11,515 MB	57,574 MB
500	100	967 MB	11,608 MB	58,040 MB
500	500	1,002 MB	12,023 MB	60,113 MB
1000	10	1,915 MB	22,977 MB	114,883 MB
1000	200	1,931 MB	23,173 MB	115,867 MB
1000	1000	2,000 MB	24,002 MB	120,012 MB
2000	50	3,828 MB	45,941 MB	229,707 MB
2000	200	3,841 MB	46,097 MB	230,484 MB
2000	2000	3,997 MB	47,962 MB	239,810 MB

System: The amount of system resources needed for running the various components of the system depends both on the specific configuration of the system and on how it is being used. The majority of system usage occurs during log retrieval, importing data into the EnergyReporterPQA™ application, and generating reports. The different usage loads are as follows:

- Idle
- Retrieval: Retrieval of meter logs involves downloading the meter data and converting it to a local file database. This occurs at the retrieval interval specified by the user. These functions also occur in parallel, so they can result in cumulative loads on the system. A large amount of disk usage occurs while the log databases are converted and data is being written to the local database files.
- Importing: Meter logs are checked every hour for new data to be imported into the EnergyReporterPQA™ application database. If there is no new data, only regular

viewing usage occurs. When new data is found, the peak load of Importing occurs. While importing, a large amount of network and disk usage occurs while the new data is written to the database.

- Reporting: Reports are checked every 12 hours. While checking, only regular viewing usage occurs. Once a month, multiple reports are generated for the various EnergyReporterPQA™ application locations. At this time, the peak load of Reporting occurs. While generating reports, a large amount of disk usage occurs while data that needs to go into the reports is read from the database.

System requirements are given in the following table. The usage requirements that are shown should be considered the Peak usage (the highest values seen on a normal basis).

		Peak					
	idle	viewing (per user)	viewing (10 users)	retrieval (per meter)	retrieval (10 meters)	importing	reporting
RAM	50 MB	140 MB	1000 MB	60 MB	600 MB	150 MB	500 MB
CPU (one thread)	0.24%	40%	400%	100%	1000%	150%	100%
Disk	2 kB/s	40 kB/s	400 kB/s	3,000 kB/s	30,000 kB/s	7,500 kB/s	3,000 kB/s

- CPU: The CPU usage is given as a percent across the entire system, and can vary based on the number of threads (which determine how the CPU handles multiple software processes). For example, with 10 viewers, there are 11 softwares running, resulting in a cumulative usage of 400%. If there are 16 threading contexts, then each will only see a usage peak of 40% (with 5 contexts free for other tasks). However, if only 4 threading contexts are available, each will be loaded with 100% usage. See the Recommendations section, which follows.
- Usage overflow: RAM, CPU, and Disk rely on each other, and overflowing one can lead to increased usage on the others. The numbers given above are dependent on enough free usage/space to accommodate the given tasks.
- Other System Usage: If there are any other tasks running on the system at the same time (such as other applications), these can take system resources away

from the MeterManagerPQA™ and EnergyReporterPQA™ applications, which will cause all tasks to run more slowly.

Recommendations: The following table gives the recommendations for optimal performance. The Dedicated column is the amount that should be reserved for the MeterManagerPQA™/EnergyReporterPQA™ software system for optimal performance. The Overall System column gives the recommendations for the average, single user system. A multiuser system should allocate more resources.

Recommendation		
	Dedicated	Overall system
Disk Space	320 GB	1 TB
CPU	4 core, 3 GHz	
RAM	8 GB	16 GB
Disk Throughput	50 MB/s	200 MB/s

- Disk Space: The system uses about 26 MB per year, per meter. 320 GB dedicated disk space will allow for 2000 meters for 5 years. See the previous Requirements chart.
- CPU: As multi-threaded systems, MeterManagerPQA™ and EnergyReporterPQA™ software can benefit from multiple CPU cores and threading contexts. It is recommended that the CPU have at least 4 cores and 8 threading contexts (for example, the Intel I7 processor).

- **Disk Throughput:** The greatest load on the system is reading from and writing to the databases on the disk. Because the entire system relies on reading from and writing to the disk, a slow disk will cause the entire system to run slowly. Under peak load, 50 MB/s can be read/written to the disk, so it is recommended that a High Performance Hard-Drive, such as a Solid State Drive, be used for database storage.
- **Dedicated System:** The Meter Log Retrieval and Report Generation components of the software have heavy usage requirements when running. For an optimal system, it is recommended that the MeterManagerPQA™ application be run on a dedicated server, reserved solely for that purpose.

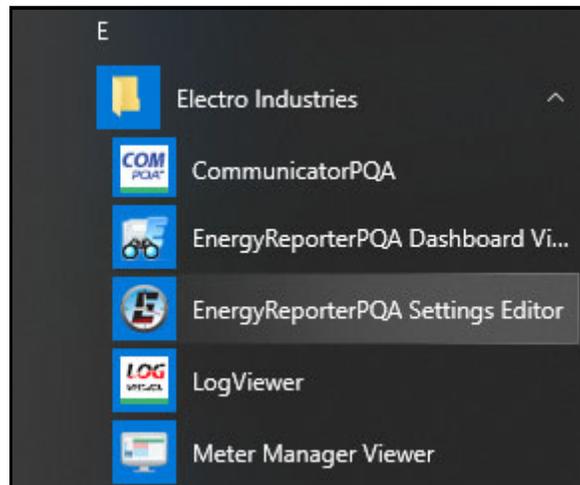
1.2.2: Installation

The EnergyReporterPQA™ application is installed along with the CommunicatorPQA™ application, unless you have chosen a Custom installation* refer to the installation instructions in the *CommunicatorPQA™, MeterManagerPQA™, and EnergyPQA.com™ Software User Manual*. The CommunicatorPQA™ Professional application with its MeterManagerPQA™ embedded software component must be installed for you to use the EnergyReporterPQA™ application.

*If you have chosen a Custom installation and have not yet installed EnergyReporterPQA™ software, download the Demo version from <https://electroind.com/downloads/software-downloads/>.

1. To run the application, select it from the Start menu:

Start>All Programs>Electro Industries>EnergyReporterPQA>Energy ReporterPQA Settings Editor.



1.3: Security and Entering a Software License Key

When you first use the EnergyReporterPQA™ application, you need to enter the software license key that lets you use the full version of the application (the Demo version lets you set up only one location and does not perform the automatic check for updates).

If you have enabled security in the MeterManagerPQA™ application, you will be required to enter a username and password. See Chapter 18 in the *CommunicatorPQA™, MeterManagerPQA™, and EnergyPQA.com™ Software User Manual*, for instructions on setting up and using security. When security is enabled:

- To access the Settings Editor, users must have read, write and configure permission.
- Dashboard Viewer users that have only read permission will be able to view bills and reports, but will not be able to generate them. To manually generate bills and reports, users must have write permission.

1. From the Settings Editor, click the Upgrade License icon (or click Help>Upgrade User License).



EnergyReporterSettings Editor Login

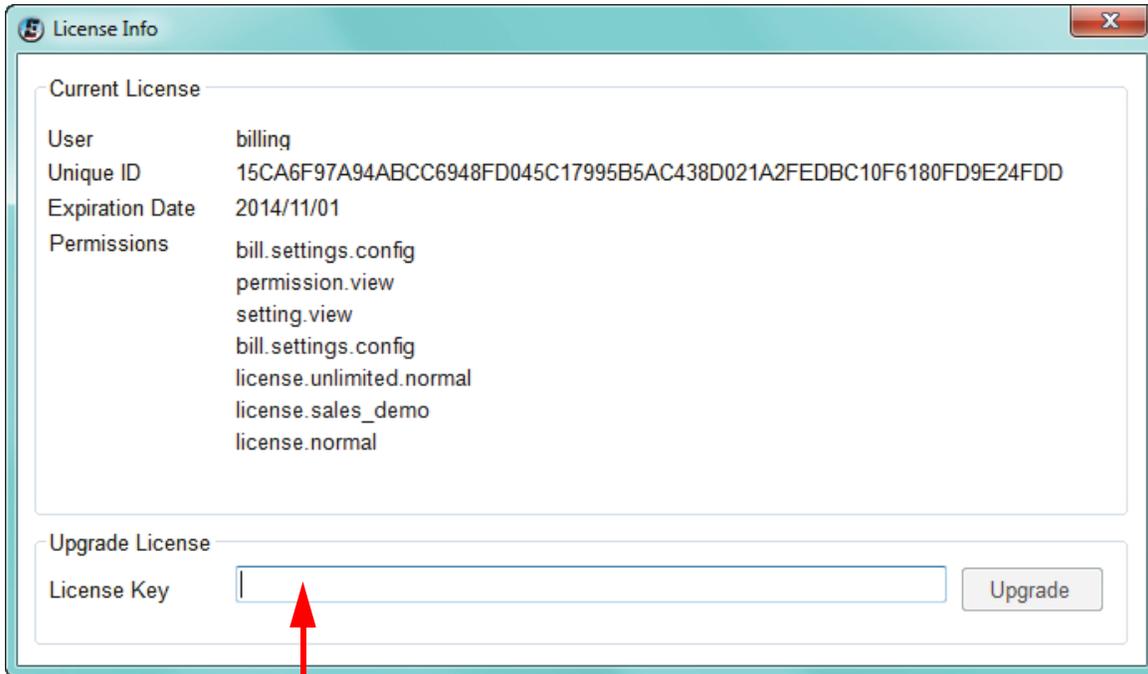
Username

Password

Login

- If security is enabled, you will see the screen shown above:
 - a. Enter your username and password.
 - b. Click Login.

- If security is not enabled, you will not see the login screen, just the screen shown below. If security is enabled, you will see the screen shown below after logging in.



The screenshot shows a window titled "License Info" with a close button in the top right corner. The window is divided into two sections: "Current License" and "Upgrade License".

Current License

User	billing
Unique ID	15CA6F97A94ABCC6948FD045C17995B5AC438D021A2FEDBC10F6180FD9E24FDD
Expiration Date	2014/11/01
Permissions	bill.settings.config permission.view setting.view bill.settings.config license.unlimited.normal license.sales_demo license.normal

Upgrade License

License Key

Enter license key here
and click Upgrade

3. Contact EIG's inside sales staff at sales@electroind.com. In the email give your name, company name and the Unique ID code shown in the License Info screen. You will receive a reply email with the software license key.
4. Enter the software license key and click the Upgrade button. The software will be upgraded to the full version of the application.

1.4: Steps for Using the EnergyReporterPQA™ Application

As mentioned at the beginning of this chapter, the EnergyReporterPQA™ application generates bills using either CommunicatorPQA™ log databases or the polling engine of the HMIPQA™ application. (Because the HMIPQA™ application is specifically configured for each customer site, data setup for the EnergyReporterPQA™ application is done when the HMIPQA™ application is installed and configured by a certified system integrator.)

You already performed Step 1 in this chapter. You need to perform the following steps in order to set up the database files to be used for Energy and other commodity logging, and to use the EnergyReporterPQA™ application to generate usage reports and bills:

Step 2 - Use the MeterManagerPQA™ application to set up your meters for automatic log retrieval. Instructions for this step is given in Chapter 2; additional information is located in chapters 16 and 18 of the *CommunicatorPQA™, MeterManagerPQA™, and EnergyPQA.com™ Software User Manual*.

Step 3 - The EIG meters are already set up for Energy logging - there is nothing additional you need to do. If you need to make any changes, you use the CommunicatorPQA™ application to configure your meter(s) to log the values you want to use for Energy, other commodity logging, and/or demand. The instructions for this are in Chapter 3.

Step 4 - Configure the EnergyReporterPQA™ application settings: provider, customer, customer locations, rate structures, meters at location. The instructions for this step are in Chapter 4.

Step 5 - Use the Dashboard Viewer: use the Usage Dashboard to compare usage data for different time frames/meters/dates and compared to weather data; generate and view usage reports and bills The instructions for this step are in Chapter 5.

Chapter 6 - Manage data.

Chapter 7 - View the Action log, test the application, and learn additional tips and advanced options.

2: Step 2 - Use the MeterManagerPQA™ Application to Automate the EnergyReporterPQA™ Application

You use the MeterManagerPQA™ application to organize your meters and to set up automatic log retrieval, both of which make the EnergyReporterPQA™ application very simple to use.

- The MeterManagerPQA™ application lets you automatically add all of your network meters to its Meter List. The Meter List is an essential feature for the EnergyReporterPQA™ application. All you have to do to set up your billing locations is to add meters to it from the Meter List. All of the meter data you need is then automatically brought into the EnergyReporterPQA™ application.
- The MeterManagerPQA™ application lets you set up automatic log retrieval for all of your meters.

NOTE: The basic steps are described here, but there are other features of the MeterManagerPQA™ application, which are covered in the *CommunicatorPQA™*, *MeterManagerPQA™*, and *EnergyPQA.com™ Software User Manual*.

There are two ways to add meters into the Meter List:

1. Auto Discovery - this is the simplest method. In this mode the software searches out and locates any meters on the network. Once the meters are found, they are automatically added to groups (based on the meter type), and the software automatically begins to download stored meter data.
2. Manual Connect - in this mode, you manually connect to the meter using its IP address. Once the address is entered, the software adds it to a group (based on the meter type), and automatically begins to collect stored meter data for that meter.

2.1: Add Meters to the Meter List Using Auto Discovery

There are two methods to configure Auto Discovery. Use whichever one best suits your needs.

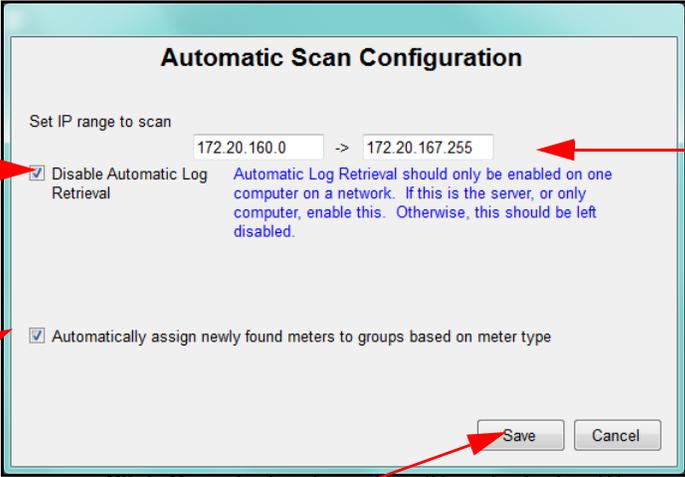
- Auto Scan - searches an IP range you enter for network meters and adds them to the Meter List.

- Meter Discovery Configuration - gives you access to additional settings for customizing scanning for meters. See Chapter 18 in the *CommunicatorPQA™*, *MeterManagerPQA™*, and *EnergyPQA.com™ Software User Manual* for instructions for using Meter Discovery Configuration.

When you use Auto Scan, the application looks for and adds Network meters in the IP address range you enter. You have the option of putting the meters into groups based on meter type, e.g., Shark.

NOTE: The first time you start the MeterManager Monitor after installation, you are asked if you want to enable Auto Scan. EIG recommends that you do enable Auto Scan.

1. Click the Auto Scan icon at the top of the screen.



The screenshot shows the 'Automatic Scan Configuration' dialog box. It has a title bar and a main content area. At the top, it says 'Automatic Scan Configuration'. Below that, there is a 'Set IP range to scan' section with two input fields: '172.20.160.0' and '172.20.167.255', separated by a right-pointing arrow. Below the IP fields, there is a checkbox labeled 'Disable Automatic Log Retrieval' which is checked. To the right of this checkbox is a blue text note: 'Automatic Log Retrieval should only be enabled on one computer on a network. If this is the server, or only computer, enable this. Otherwise, this should be left disabled.' Below that is another checkbox labeled 'Automatically assign newly found meters to groups based on meter type' which is also checked. At the bottom right, there are 'Save' and 'Cancel' buttons. Red arrows point from external text to these elements: one to the 'Disable Automatic Log Retrieval' checkbox, one to the IP input fields, one to the 'Automatically assign...' checkbox, and one to the 'Save' button.

Unless this computer is the Log Collection server, leave this box checked

Enter IP address range for meter discovery here

Leave this check-box selected if you want meters put in groups by meter model, e.g, Shark

Click Save to begin scan with selected settings

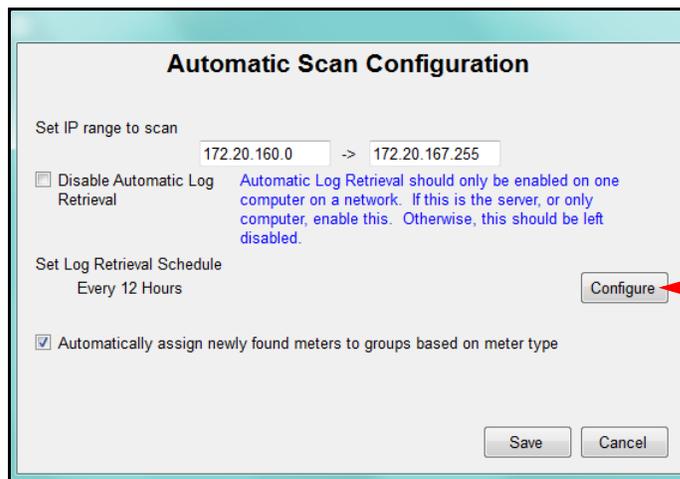
2. In the Automatic Scan Configuration screen, you set:

- The IP range in which you want the application to search for meters: the starting and ending IP addresses.

NOTE: EIG meters use Modbus for communication, which defaults to Port 502. However, if you have changed the Modbus port on the meter, or are using a network device that changes the port mapping, you can specify the port range to scan by adding ":[port]" after the IP address.

For example, range 192.168.0.1:503 to 192.168.0.255:505 will scan all IP addresses from 192.168.0.1 to 192.168.0.255, and attempt to connect to those IP addresses via ports 503, 504, and 505.

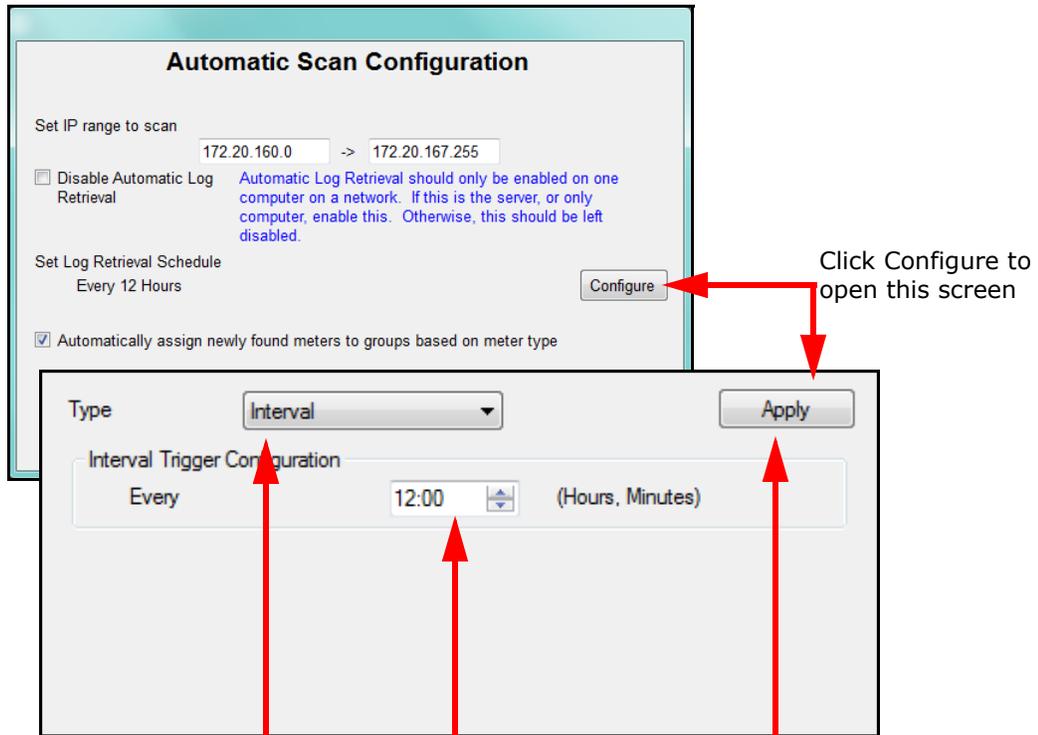
- Whether or not meters are grouped by meter model. Leave the checkbox selected to group any discovered meters this way, for example, into Shark or Nexus groups. Groups are used to perform tasks on multiple meters at one time. See Section 18.2.2 for information on groups.
- Disable automatic log retrieval - the default of this screen is that automatic log retrieval is disabled for the computer (the box is checked). That is because only one computer in the network - the server, should be enabled for automatic log retrieval.
 - If this computer is not the Log Collection server, leave the box checked.
 - If this computer is the Log Collection server, uncheck the box - the screen will change as shown below.



Click to set up a log retrieval interval of other than every 12 hours (not recommended)

- Now that you have enabled automatic log retrieval for the computer, you can set the log retrieval interval. The default is every 12 hours, which is the recommended setting. If you want to change the interval, click the Configure button and then enter the new interval. See the example screen on the next page.

Changing Log Retrieval Interval screen



Click to select: Interval - to set up interval log retrieval; Time - to set a specific log retrieval time; or Manual - to perform a manual log retrieval, e.g., to test the system

Click to set interval for log retrieval

Click Apply to save the new interval

- Click Save to begin the automatic scan for meters with these settings. In the Searching IP Address field of the Status section, the Meter List screen will show the IP addresses as the application searches for meters. When searching is complete, the discovered meters will be shown in the Meters List (see the example screen on the next page).

Meter Manager Monitor

Tools Help

Meter List Configure Meter Scripts Configure Group Scripts Script Status Auto Scan Meter Issues

METERMANAGERPQA™

Meter List

Meter Name	Meter Type	Online Status	Next Action
Building 1			
00104181_test	Nexus 1252	Online	6/5/2015 4:00 PM
Bld_35 Rm_160	Nexus 1252	Offline	6/5/2015 4:00 PM
1252_KYZ_Monitor	Nexus 1252	Online	6/5/2015 4:00 PM
1252_RelayUnit_5	Nexus 1252	Online	6/5/2015 4:00 PM
1252_RelayUnit_6	Nexus 1252	Online	6/5/2015 4:00 PM
1252_Unit6	Nexus 1252	Online	6/5/2015 4:00 PM
Office DS	Shark 200	Online	6/5/2015 4:00 PM
Office JK	Shark 200	Online	6/5/2015 4:00 PM
Office JS	Shark 200	Online	6/5/2015 4:00 PM
Office RK	Shark 200	Online	6/5/2015 4:00 PM
Office RP	Shark 200	Online	6/5/2015 4:00 PM
MP200			
MP200_1	MP200	Online	
MP200_2	MP200	Online	
MP200_3	MP200	Online	

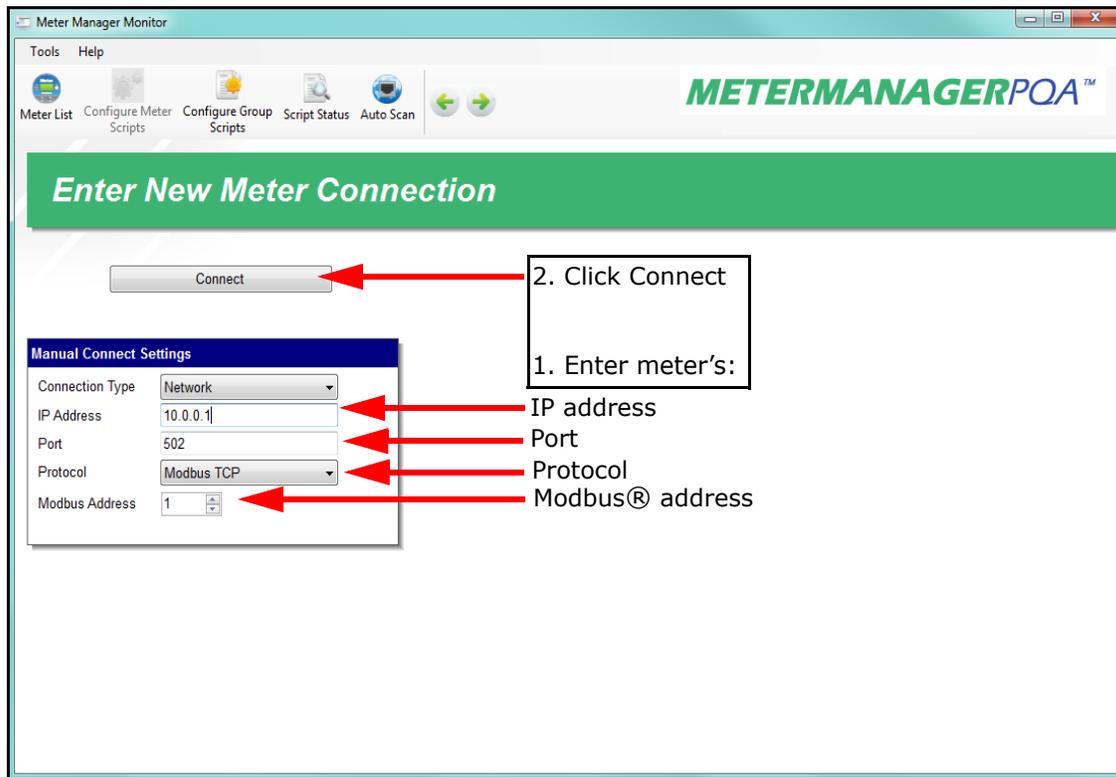
Highlight Meter to Select Action

Status Bar

- Meters Online: 221
- Meters Offline: 16
- Meter Warnings: 0
- Scripts Status: 0/23
- Script Errors: 3667
- Searching IP: 172.20.166.254:50

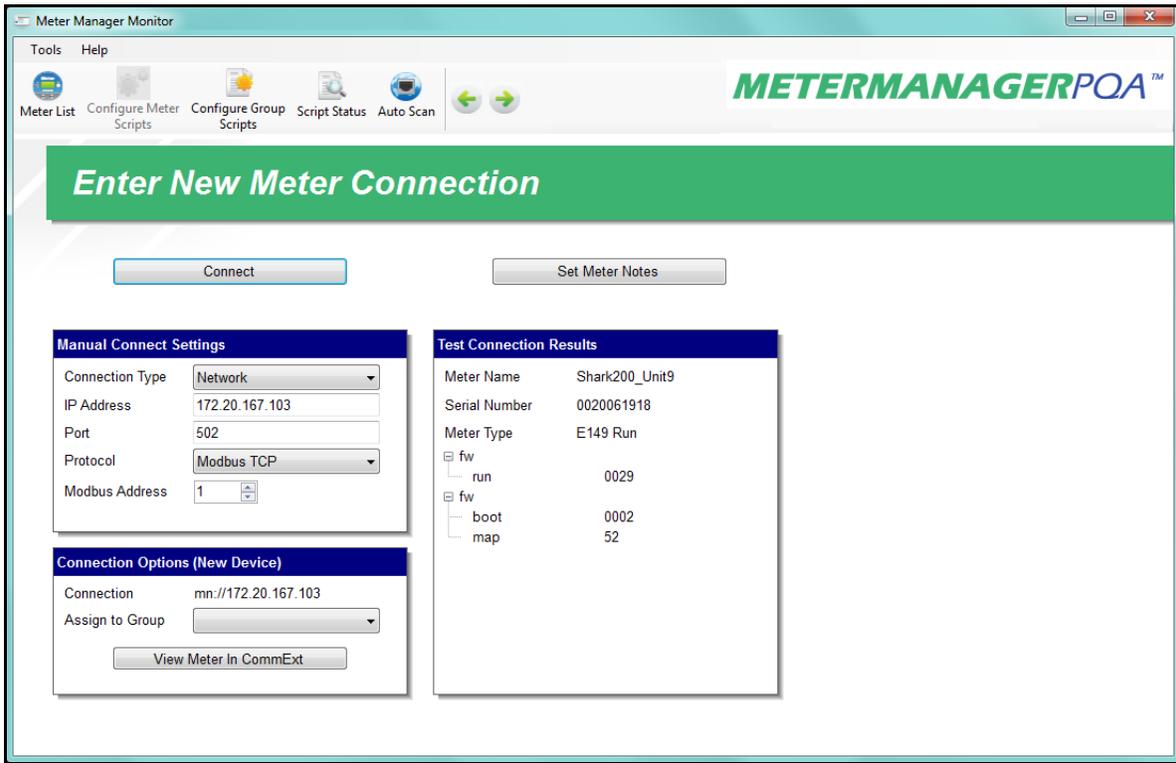
2.2: Manually Connect to Meter

To manually connect to a meter, you enter the meter's IP address.



Manual Meter Setup Screen

When you click Connect, the software looks for the meter, and, when found, shows the screen below.



This screen shows meter connection information. Click Connect to add the meter to the Meter List.

- You set the interval for log retrieval for a manually connected meter by clicking Configure Scripts from either the left side or top of the Meter List screen.

1. Select the group the meter is in

2. Click Configure to open the Interval setting screen

3. This screen is the same as shown on page 2-4: see instructions there

4. Click Apply

5. Click Save to implement change

Meter Name	Meter Type	Online Status	Security
MP200_1	MP200	Online	Not Enabled
MP200_2	MP200	Online	Not Enabled
MP200_3	MP200	Online	Not Enabled
MP200_5	MP200	Online	Not Enabled
MP200_6	MP200	Online	Not Enabled
MP200_4	MP200	Online	Not Enabled

Retrieve Logs

Retrieve Logs for this Group

Frequency Every 12 Hours

Apply

Type Interval

Interval Trigger Configuration

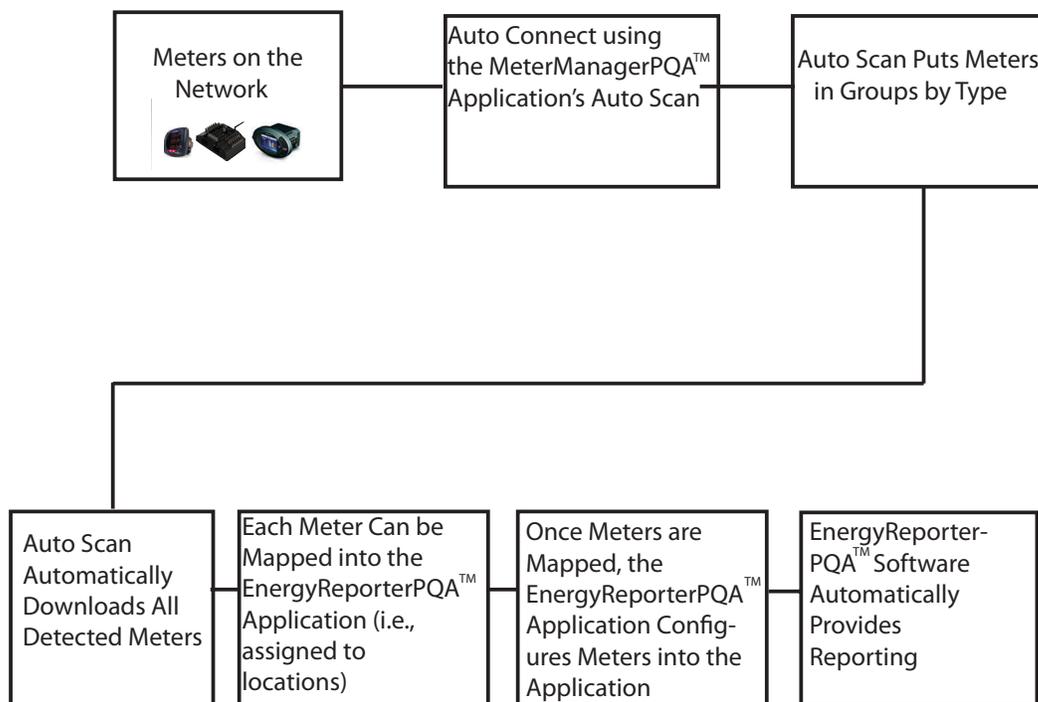
Every 12:00 (Hours, Minutes)

Apply

The default interval for log retrieval is every 12 hours. This means that you will receive data from all the meters in this group every 12 hours. If you need the data faster than that, it can be collected as often as every hour. Note that the smaller the interval between log retrievals, the more load is placed on the network.

2.3: Log Retrieval through the MeterManagerPQA™ Application

When log retrieval is performed by the MeterManagerPQA™ application, logs for all of the meters in the group(s) are automatically retrieved at the programmed interval, making the job of managing multiple meters simple. The EnergyReporterPQA™ application automatically imports the retrieved logs and uses them to build the EnergyReporterPQA™ usage database. The usage database is then used to generate usage reports, bills, and viewing Dashboard data. See the diagram below.



NOTE: The MeterManagerPQA™ software automatically adjusts the meter data to account for time changes due to Daylight Savings. For this to work, the meter must be configured to automatically adjust time using the same Daylight Savings rules as the computer that MeterManagerPQA™ is running on. If the meter is updated following different rules, errors may be flagged in the data. Note that the DST time adjustment can be disabled through Tools > Options > Import > Adjust for DST time changes.

For more detailed instructions on the MeterManagerPQA™ application, see Chapter 18 of the *CommunicatorPQA™, MeterManagerPQA™, and EnergyPQA.com™ Software User Manual*.

3: Step 3 - Set Up Logging

In most cases, there is no need to do anything special to set up logging for the EnergyReporterPQA™ application database. This is because all EIG meters ship with a default Device Profile that logs energy values. As long as you haven't changed this, the automatic log retrieval set for the meters using the MeterManagerPQA™ application will get all the data that the EnergyReporterPQA™ application needs in order to generate usage reports.

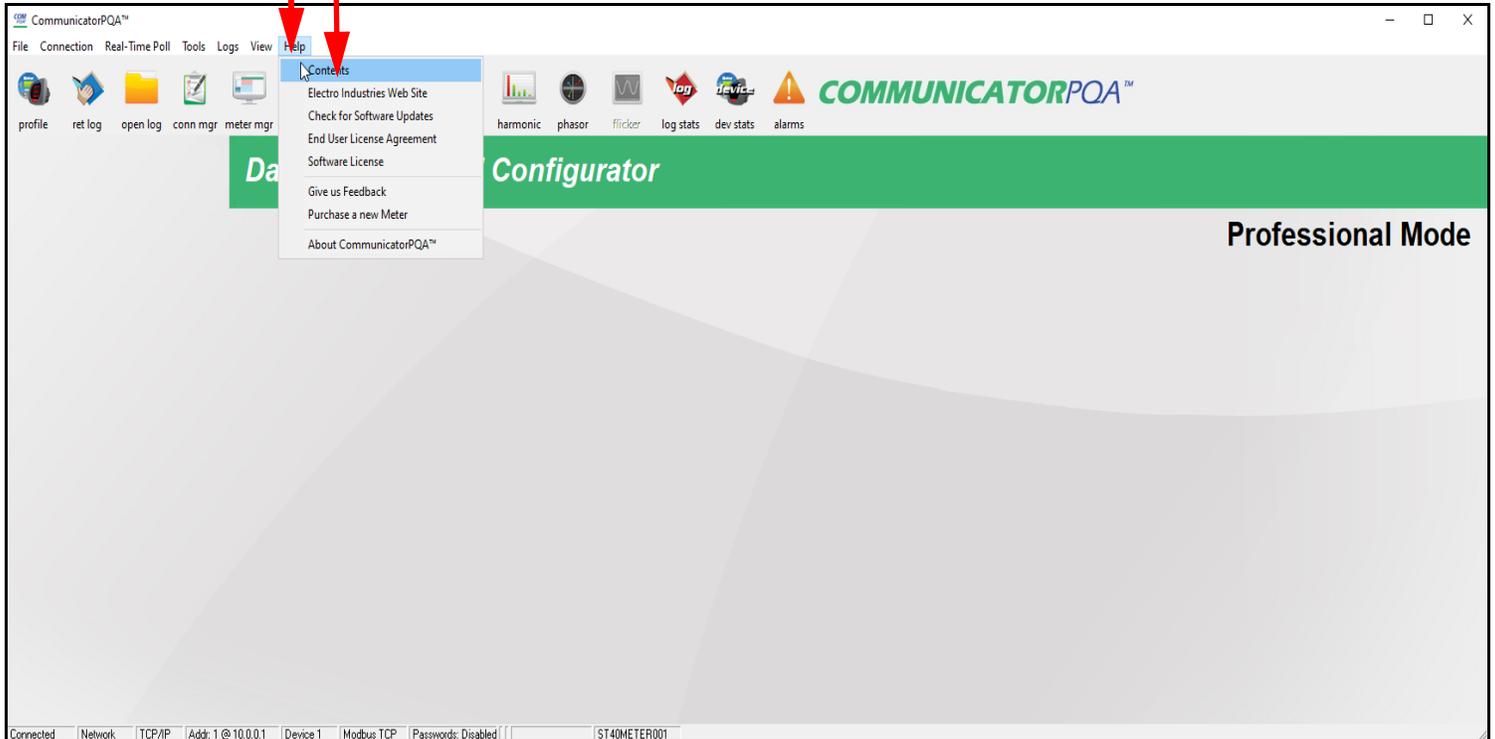
NOTE: If you wish to include the demand computed by the meter in the bill, then add the Demand channel to the historical log configuration. This allows the EnergyReporterPQA™ application to import the meter's demand values to use in the bill.

If you need to add Demand, or make any other changes to Energy, Energy in the Interval, and other Commodity logging, use the meter's Device Profile, accessed through the CommunicatorPQA™ software.

NOTE: Only the basic steps are given here. For more detailed information, consult the *CommunicatorPQA™, MeterManagerPQA™, and EnergyPQA.com™ Software User Manual* (you can access the manual online by clicking Help>Contents in the CommunicatorPQA™ application's Menu Bar).

1. Click Help

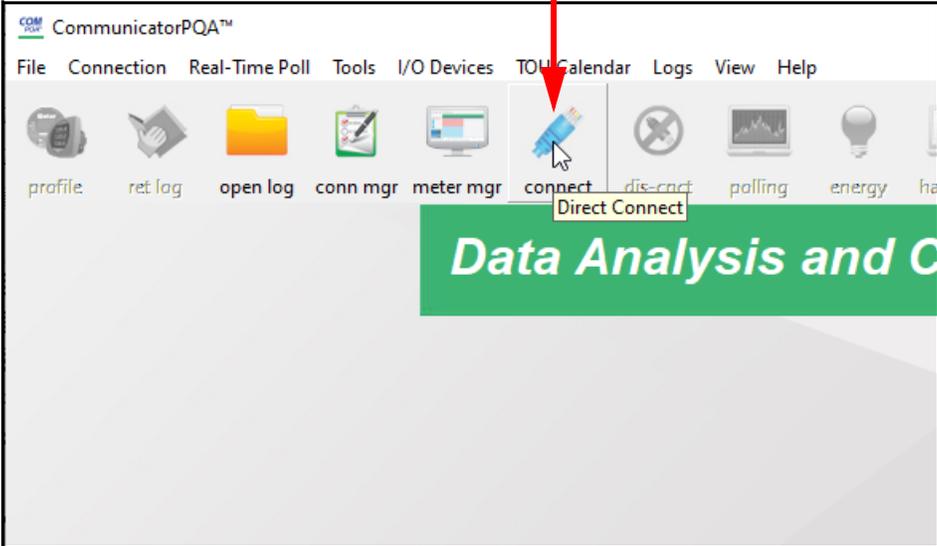
2. Click Contents to view manual



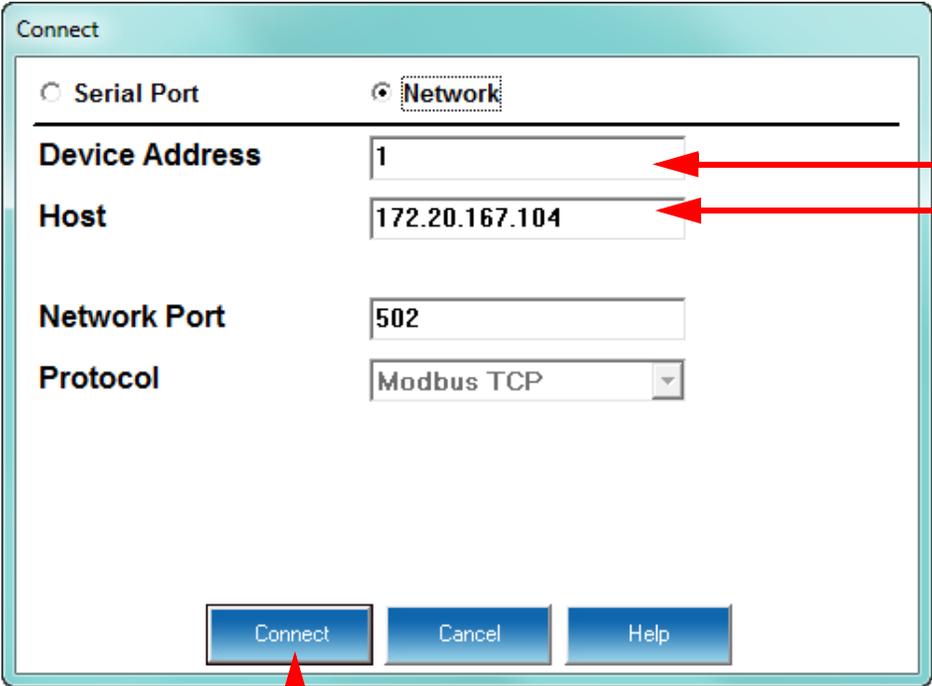
1. Open the CommunicatorPQA™ application by clicking Start>All Programs>Electro Industries>CommunicatorPQA. You will see the screen shown above.

2. Click the Connect icon in the Icon bar to connect to the meter you are setting up.

Click Connect icon



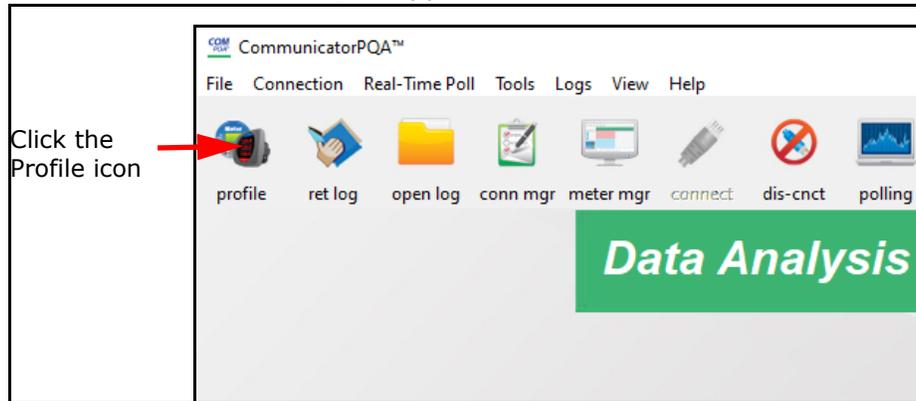
See the example screen below.



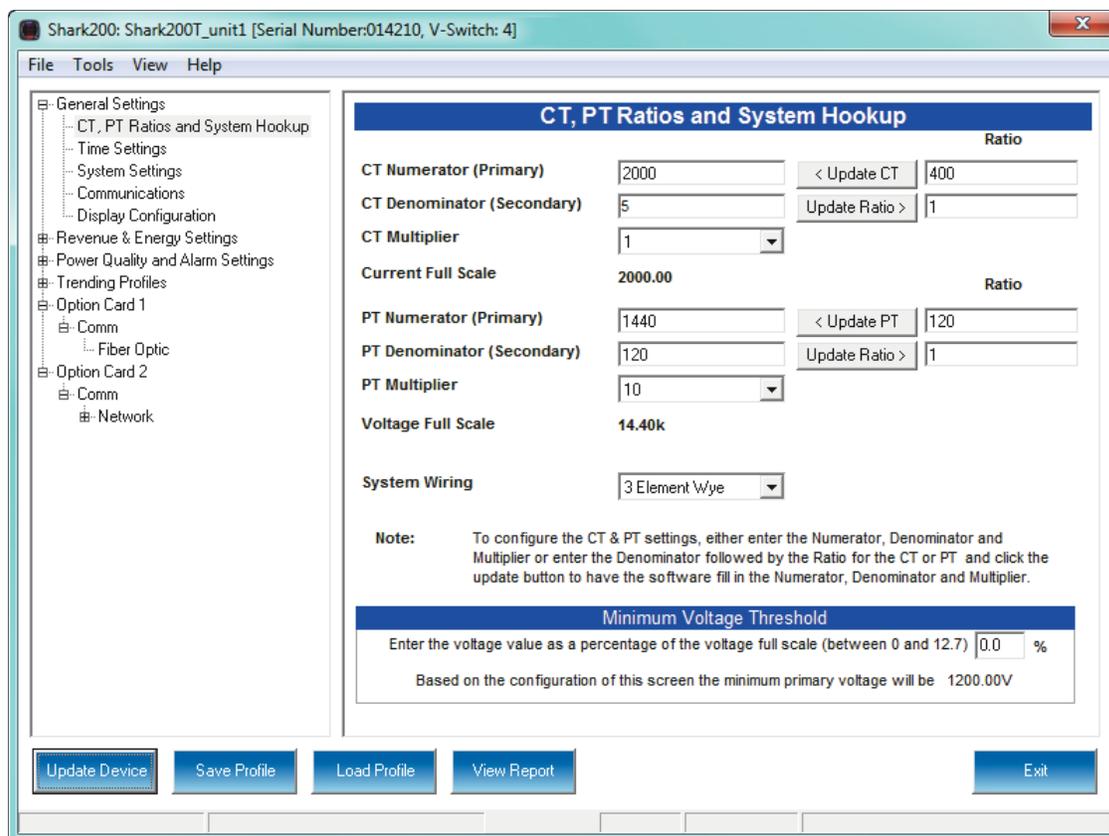
- 1. Enter Device Address
- 2. Enter Device's IP Address

3. Click Connect

3. From the CommunicatorPQA™ application's Main screen, click the Profile icon.



The Device Profile screen for the meter opens. See the example screen, shown below.



Shark® 200 Meter Device Profile Screen

4. For the Shark® meters and the MP200™ metering system, click on the + sign next to Trending Profiles; for the Nexus® meters, click the + sign next to Trending Profile Settings and then the + sign next to Trending Setup. You will see a list of historical (trending) logs.

Double-click on the log you want to use to trend energy or other usage. You will see a screen that lets you select the values you want to log. Refer to the table below for the values to select for energy logging.

NOTE: For the MP200™ metering system, there is only one historical log for use with the EnergyReporterPQA™ application - either historical log 2 for the MP200-Y three phase configuration or historical log 3 for the MP200-S single phase configuration. The log is pre-configured with the data points you need for logging.

Table of Settings for Logging Energy, Energy in the Interval, and Commodity

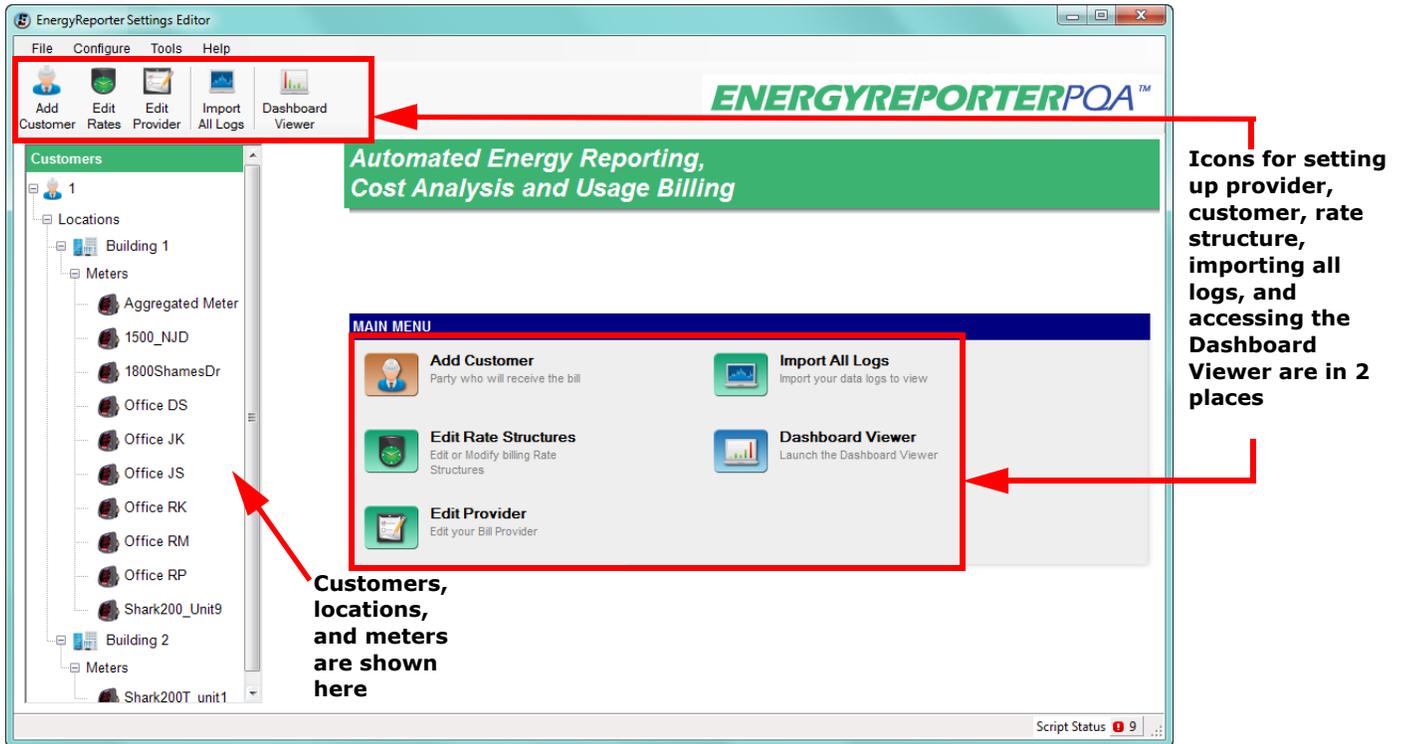
Meter	Group/Sub-group			Data Point		
	Energy	Interval Energy	Commodity	Energy	Interval Energy	Commodity
Shark	Energy	Energy in the Interval	Accumulators	Watt-hours Received	Watt-hours Received	Input used for accumulation
Nexus	Accumulators / Energy/ Scaled Primary	Interval Accumulators / Energy/ Scaled Primary	Internal Pulse Accumulation /Aggregations	Quadrant 1+4 Wh	Quadrant 1+4 Wh	Input used for accumulation
MP200	Pre-configured in Log 2 (MP200-Y) or Log 3 (MP200-S)					

See the *CommunicatorPQA™*, *MeterManagerPQA™*, and *EnergyPQA.com™ Software User Manual* for detailed instructions.

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4: Step 4 - Configure the EnergyReporterPQA™ Application Settings

Use the EnergyReporterPQA™ Settings Editor to set up the information you need to generate usage data, bills and usage reports. When you start the EnergyReporterPQA™ Settings Editor you see the main screen.



NOTE: If the MeterManagerPQA™ application is running (downloading meter logs), you will see "Script Service Running" at the bottom right of the screen. Click on the message to either pause the MeterManager service, or open the MeterManager Monitor. See Chapters 18 of the *CommunicatorPQA™*, *MeterManagerPQA™*, and *EnergyPQA.com™ Software User Manual* for additional information.

Follow these basic steps to set up the EnergyReporterPQA™ application:

1. Set up provider information. The provider is the person or organization which is providing the energy, sending the bill, and receiving payments. This information appears on the generated bills, so that the customer knows where to send payment.

2. Set up rate structures. The rate structure is the collection of settings that determine what rates to apply to the usage values for a commodity, e.g., kWh. The rate structure includes On Peak and Off Peak settings, holidays, and other charges, such as taxes.
3. Set up a customer. A customer is the person or organization which is receiving the bill. A customer may have multiple locations, each of which will get its own bill.
4. Set up the customer's locations. A billing location is a single unit for which a bill is generated, e.g., a building. A customer can have multiple locations.
5. Assign the meters and a rate structure to the customer's locations. Each location can have multiple meters and a rate structure for each commodity being billed for, e.g., Energy and gas.
6. A meter billing point can also be an aggregate of more than one metering point; this is called a virtual meter. For example:
 - Meter A + Meter B
 - Meter A + 50% of Meter B
 - Meter A - Meter B
 - Meter A - 50% of Meter B
 - Etc.

With virtual meters a user can configure meters to accurately represent the load, by apportioning the correct amount of energy per meter for the actual circuit usage.

For example, if your customer owns three apartment buildings, you would set up each building as a location, and enter all of the meters in a building as well as any rate structures applied to usage for that building.

See the diagram below.

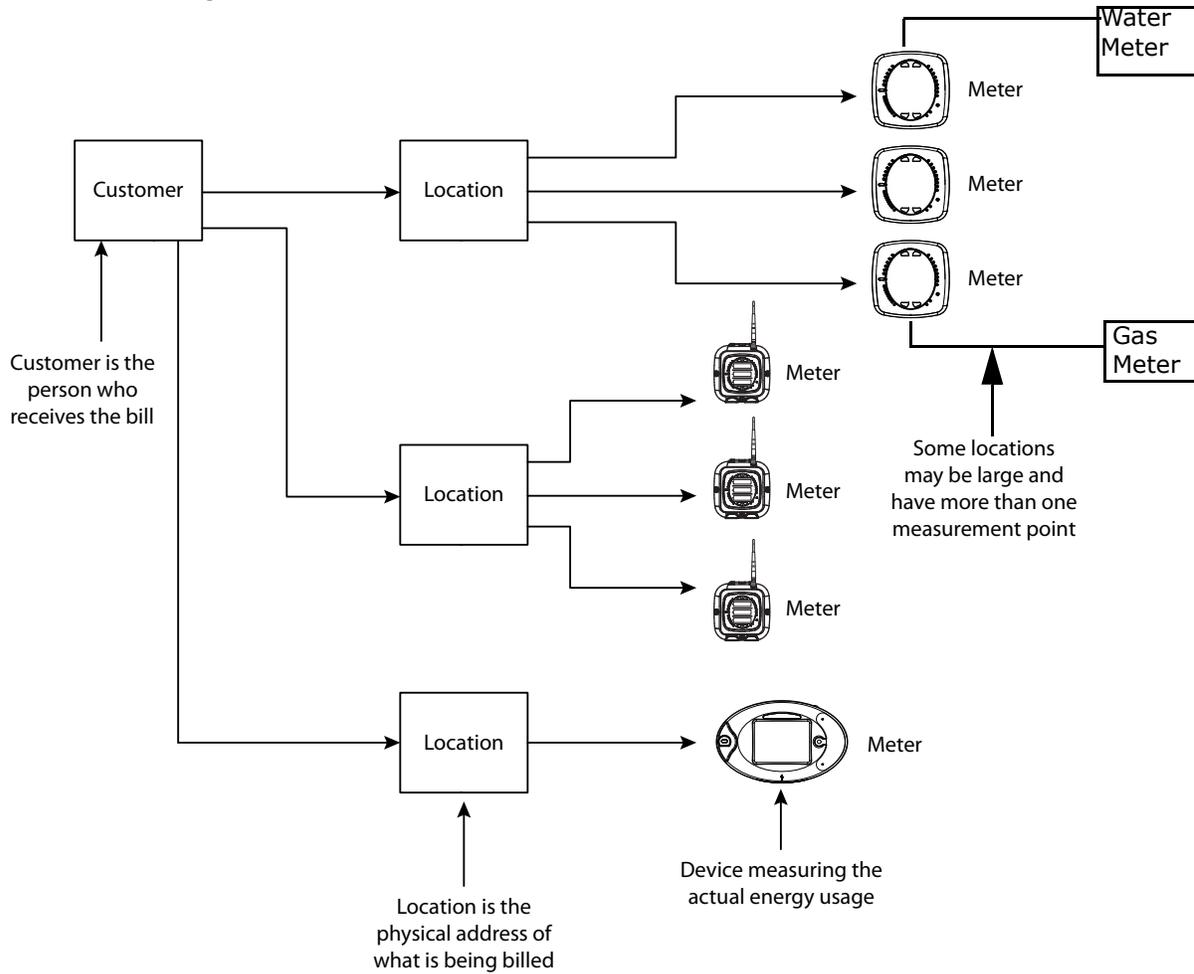


Figure 4.1: Overview of Customer Locations, Meters, Rate Structures

4.1: Set Up a Provider

First set up the provider information. The provider is the person who is sending the bill to the customer. The provider will get paid for providing the electricity or other commodity to the customer; the customer is the user of the commodity.

1. From the Settings Editor main screen, click the Edit Provider icon.

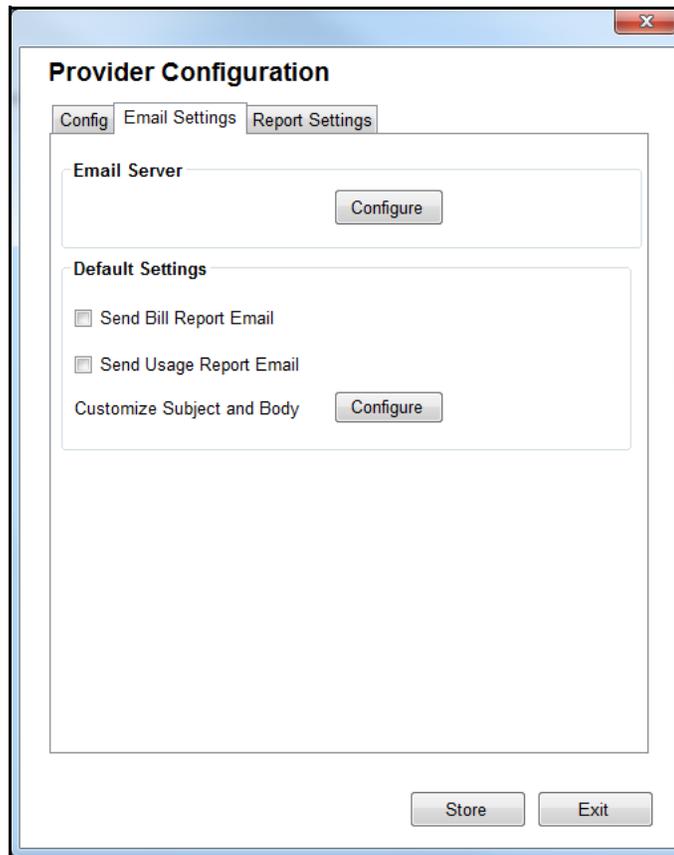
The screenshot shows a 'Provider Configuration' dialog box with three tabs: 'Config', 'Email Settings', and 'Report Settings'. The 'Config' tab is selected. The form contains the following fields:

- Provider Name:** Provider 1
- Provider Telephone:** 555-1234
- Address:** 24 Main St, Anytown, NY
- Payment Address (Remit Payment To):** 15 Main St, Box 1234, Anytown, NY

At the bottom of the dialog are two buttons: 'Store' and 'Exit'.

- This screen has three tabs: Config, Email Settings, and Report Settings.
2. In the Config tab, for the provider, enter:
 - Name
 - Telephone
 - Address
 - Payment Address - the address where payment should be sent

3. Click the Email Settings tab.



- The settings on this screen are used by the software when it automatically emails bills and enabled reports to customers. The automatic Bill Report and Usage Report email feature lets you generate hundreds of automated bills or energy reports. You can configure the system to send out bills to users/customers automatically on a monthly basis. This feature provides you with an automated accounting service and eliminates any need for third party billing providers. You receive feedback of successful transmission for accounting purposes (through View Bills - see 5.4.3: View Bills/Invoices, on page 5-32, or the Energy Dashboard - see 5.1: Accessing the Dashboard Viewer, on page 5-2) and can set up a cc address so that you receive a copy of the bill or usage report.

a. Click Configure next to Email Server.

Provider Email Server Settings

Email Settings

From:

Send copy of emails to provider.

Host Settings

Host:

Port:

User:

Password:

SSL: SSL is required

Send Settings

Retries:

Retry Timeout (ms): Set to 0 to disable

Test OK Exit

b. Enter the following:

- From Email: enter the name that will appear in the emails' From field.
NOTE: When the box next to "Send copy of emails to provider" is checked, a copy of any bill or report email sent to a customer is also sent to the From email address.
- Host Settings: enter the email's Host Name, Port, and User name and Password if being used.
- SSL checkbox: this box needs to be checked if the email server you are using requires SSL security. See the examples below for setting up email.
- Send Settings: enter the number of email retries in sending and the Retry Timeout in milliseconds (the default is 1000ms). If you want to disable the Retry Timeout, enter 0 in this field.

• Email Server Setting Examples:

- **Yahoo**

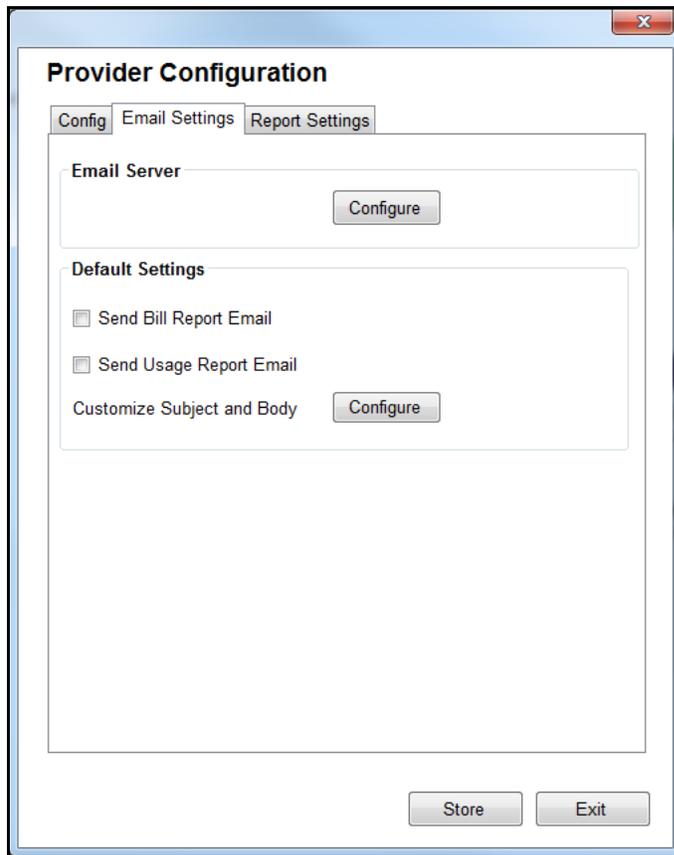
Host:smtp.mail.yahoo.com
Port:587
User:Yahoo Account E-Mail Address
Password: Yahoo Account Password
SSL:Check SSL Is Required

-Gmail

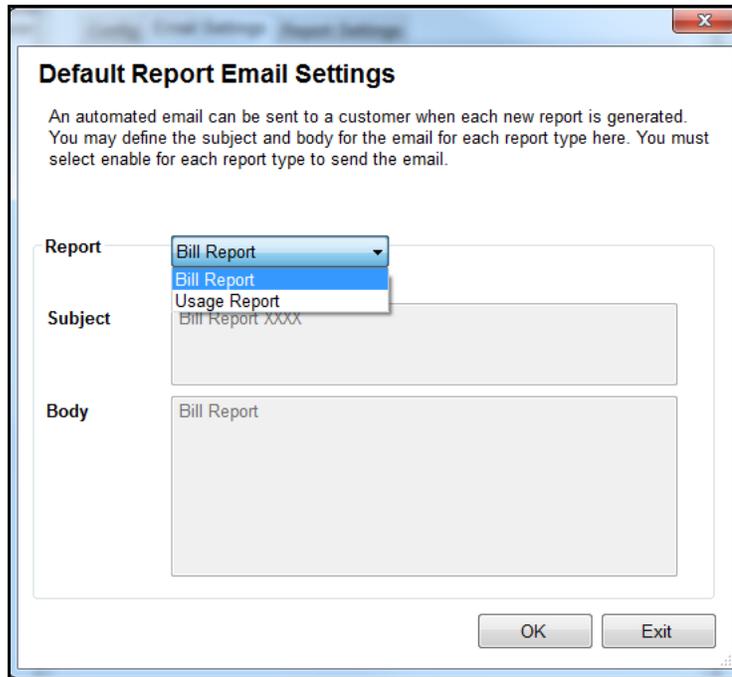
Host:smtp.gmail.com
Port:587
User:GMail Account E-Mail Address
Password: GMail Account Password
SSL:Check SSL Is Required

Note that for Gmail, you also need to enable the setting "Allow access from less secure apps," which is accessed from Gmail Account settings.

c. Click OK. You will be back on the Email Settings screen.

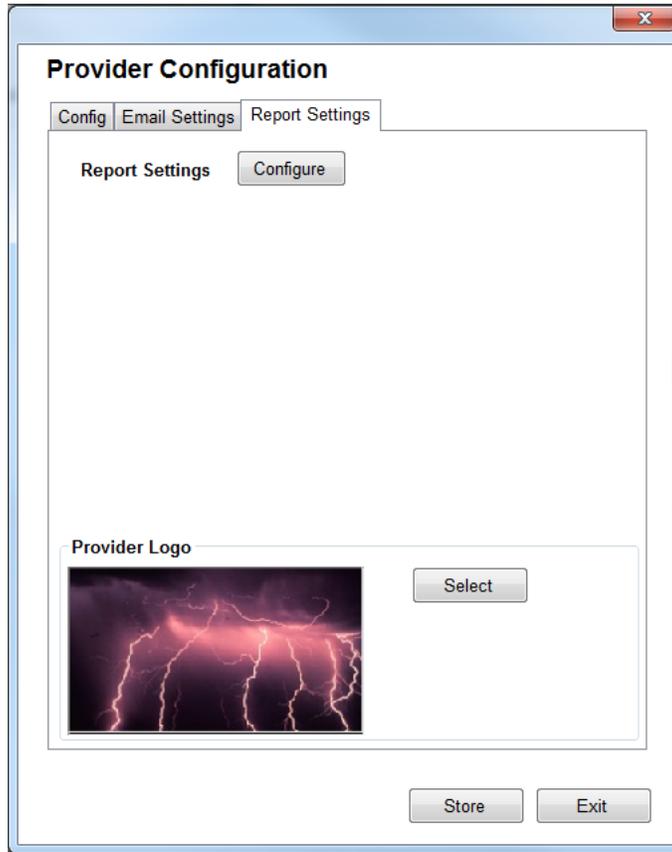


- In the Default Settings section, check either or both of the boxes to email the Bill Report and/or the Usage Report when reports are emailed.
- To customize the email settings click configure next to Customize Subject and Body.



- a. Select the Bill Report or Usage Report.
- b. Enter the text you want in the Subject and Body Fields.
- c. Click OK. You will be back on the Email Settings screen.

4. Click the Report Settings tab.



- This screen lets you set up report details.
 - a. To enter a logo for the Provider, click Select and choose the logo.

NOTE: The image must be 256x128 pixels in size. If it is not, the image will be scaled by the application, which may result in the image not looking the way you want.

b. Click Configure next to Report Settings to set up bill details.

Report Settings

Bill Detail | Consumption Report | Custom Usage Report

Replace Bill with an Invoice

Display Due Period in Bill
Due Period: 14 Days

Usage Display Precision: 2

Disable Itemized Meter List on All Bills

Enable Bill Notes [Set]

Override Bill Header [Set]

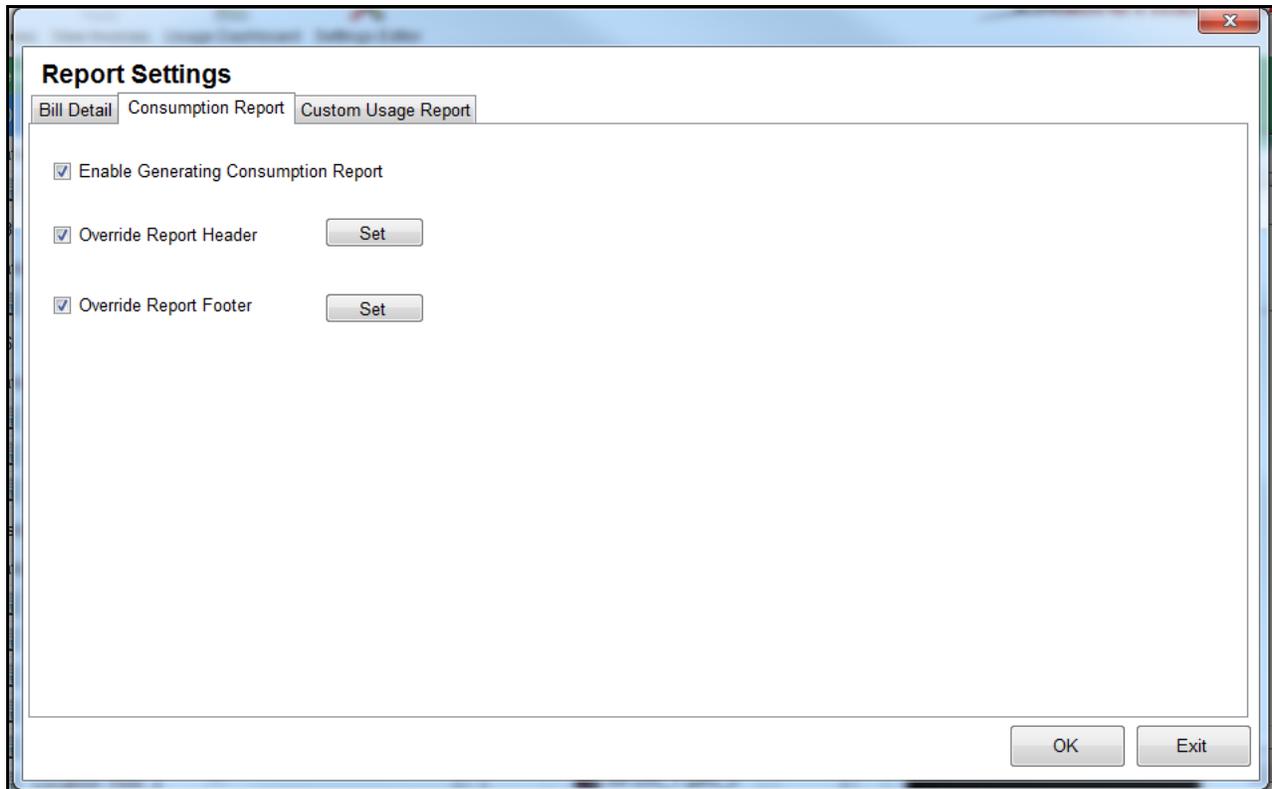
Override Bill Footer [Set]

OK Exit

- The first tab is Bill Details. Make the following settings:
 - Check the box to replace the bill with an invoice.
 - Check the box to Display Due Period in the bill and select the number of days from the bill's origination date until the due date, e.g., 14 days after bill's origination date.
 - Usage Display Precision - select the number of digits to display for the energy usage reported on the bill. For example, if the meter measures 173.567 kWh in a month, and the precision is 0, then 173 will be displayed. If the precision is 2, then 173.56 will be displayed. Setting the precision higher allows the user to see the precise value of their usage. Note that this setting is only used for display. Internally, the full usage value is used for calculations.
 - Check the Disable Itemized Meter List on All Bills if you want only the total charges, and not the itemized usage details, printed on all bills for all customers and locations for this provider. Note that you can override this selection for specific locations - see 4.4: Set Up a Location and Add Meters to It, on page 4-57, for instructions.
 - Check the box next to Enable Bill Notes and click Set to enter text to add to the

bill.

- Check the box next to Override Bill Header and click Set to enter alternative text for the bill's header.
- Check the box next to Override Bill Footer and click Set to enter alternative text for the bill's footer.
- Click the Consumption Report tab.



- When enabled, the consumption report will be generated and emailed along with the bill or invoice. Make the following settings:
 - Click the checkbox to enable the consumption report.
 - Check the box next to Override Report Header and click Set to enter alternative text for the consumption report's header.
 - Check the box next to Override Report Footer and click Set to enter alternative text for the consumption report's footer.

c. Click the Custom Usage Report tab.

- The EnergyReporterPQA™ application gives you the ability to create custom CSV (comma separated values) usage reports of meters and locations. You can then send these reports to customers, import them into external energy or costing software applications, or use them for further analysis.
- Once a custom usage report is generated, it can be automatically sent via email.
- The report is also saved in the following directory:
C:\Users\Public\Public Documents\Electro Industries\E-Billing Ext\Reports\Custom Usage

Note that this path is configurable - see 7.4.1: Path Setting, on page 7-15, for instructions on configuring the path.

Report Templates box - click green plus icon to add a report to the list

Name of the report currently selected in the Report Templates box

Report Fields - click the green plus icon to add a field to the report

Click to delete the selected report

Click to add a report

Default and New Reports

Click to copy the selected report template

Additional settings - auto generation, regenerate, report period, email settings, etc.

Click to view a preview of the report

Custom Field	Column Header
cust.name	Customer
loc.name	Location
meter.name	Meter
meter.serial	Serial #
data.kWh.start.date	Start Date
data.kWh.start.value	Start Usage
data.kWh.end.date	End Usage Date
data.kWh.end.value	End Usage
data.kWh.demand.peak.date	Peak Demand Time
data.kWh.demand.peak	Peak Demand

- Any reports already created are shown in the Report Templates box on the left side of the screen. There is a default custom report already available for use - click on it to see the fields in the default report.

- Create a New Custom Usage Report

To add a new report, click on the green plus sign icon (to delete a report, click on it in the list and then click the red minus sign icon). Make the following settings:

- Report Name: Enter a name for the report in the Report Name field. This name will be used as the first part of the filename when the file is saved, followed by the report period starting date, and then the type of report, e.g, monthly. For example, Special customers.2015-10-28.Monthly

for a report named Special customers, on a monthly schedule, and containing data for October 28, 2015 to November 27, 2015.

- **Auto Generate:** If you want the report to be automatically generated on its period schedule, click the Auto-Generate box to check it. Note that you can generate the report manually at any time via the Dashboard Viewer - see 5.3.3: Generate Custom Reports, on page 5-20, for instructions.
- **Location Report:** The Location Report checkbox determines whether the report gives the requested information for each meter in the location (box unchecked) or for the locations as a whole (checked). You may want a more detailed report of all of the meters in a location for analysis, and you may want a report of locations as a whole to use for billing. Select whichever option is best for your needs.
- **Use Start Date:** This field lets you specify when you want your reports to start being generated. For example, if you have three years of data, but only want to generate a report for the last two months, you would specify a date two months ago. This is especially useful if you need to change the format of the report, but only need to regenerate a short period of reports.
- **Report Period and Period Start:** Select the Report Period (Daily, Weekly, Monthly, or Yearly) and Period Start (1st - 28th) from the pull-down menus. When the report is generated automatically, these fields determine both the length of the report, for example - a months' worth of data; and when the report starts, for example on the 5th of the month. For example, if you select "Monthly" and "5," the report will contain data from the 5th of each month to the 4th of the next month.

- **Scope:** The Scope setting controls which meters and locations are included in the report. Select All, Customer, or Location from the pull-down menu.
 - If you select All, the report will be generated with the requested data from all meters, in all locations, and from all customers.
 - If you select Customer, the report will be generated for all meters, in all locations for just the customer you select in the Target field.
 - If you select Location, the report will be generated for all meters in the location you select in the Target field.
- **Target:**
 - If you select Customer for the Scope setting, select the customer you want to print the report for, from the pull-down menu.
 - If you select Location for the Scope setting, select the location you want to print the report for, from the pull-down menu.
- **Include Virtual Aggregate Meter:** The Aggregate meter is a virtual, i.e., non-physical meter, that contains the totalized readings from all of the meters at a location. If you want to include this in your report, click the Include Virtual Aggregate Meters checkbox to select it.

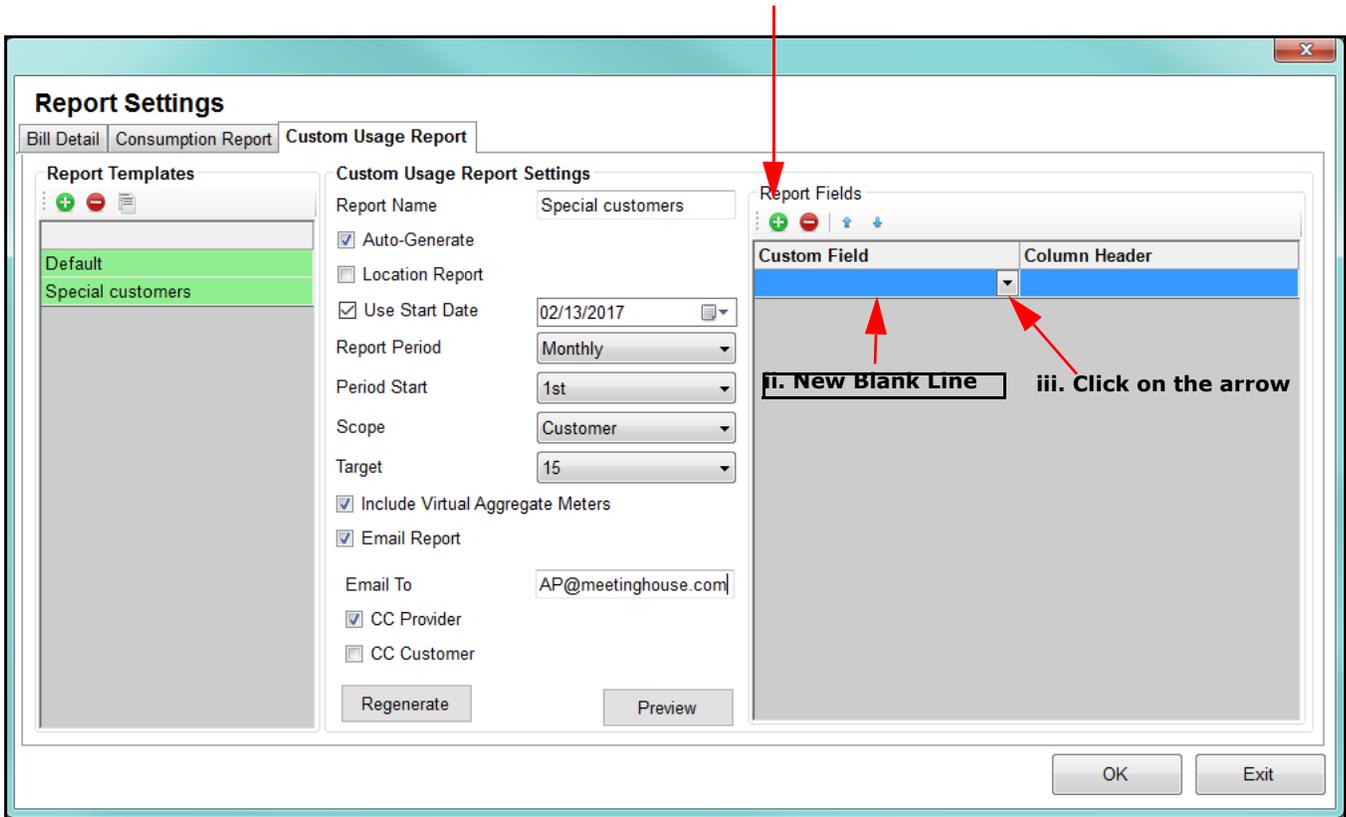
- Automatically Email the Custom Usage Report

- **Email To:** The custom usage report can be automatically emailed to your customer and others, e.g., you, as the Provider. If you want the report to be emailed, click the Email Report box to check it.
 - You will see the Email To field and CC fields.
 - Enter the email address.
 - You can choose to send a copy of the email to the Provider and/or the customer, by clicking the box next to each option to check it.
 - When Customer is selected in the Scope field, the email will be CC'd to the email address configured in the customer's information - see 4.3: Set Up a Customer, on page 4-54.

- Set Up the Custom Usage Report Fields

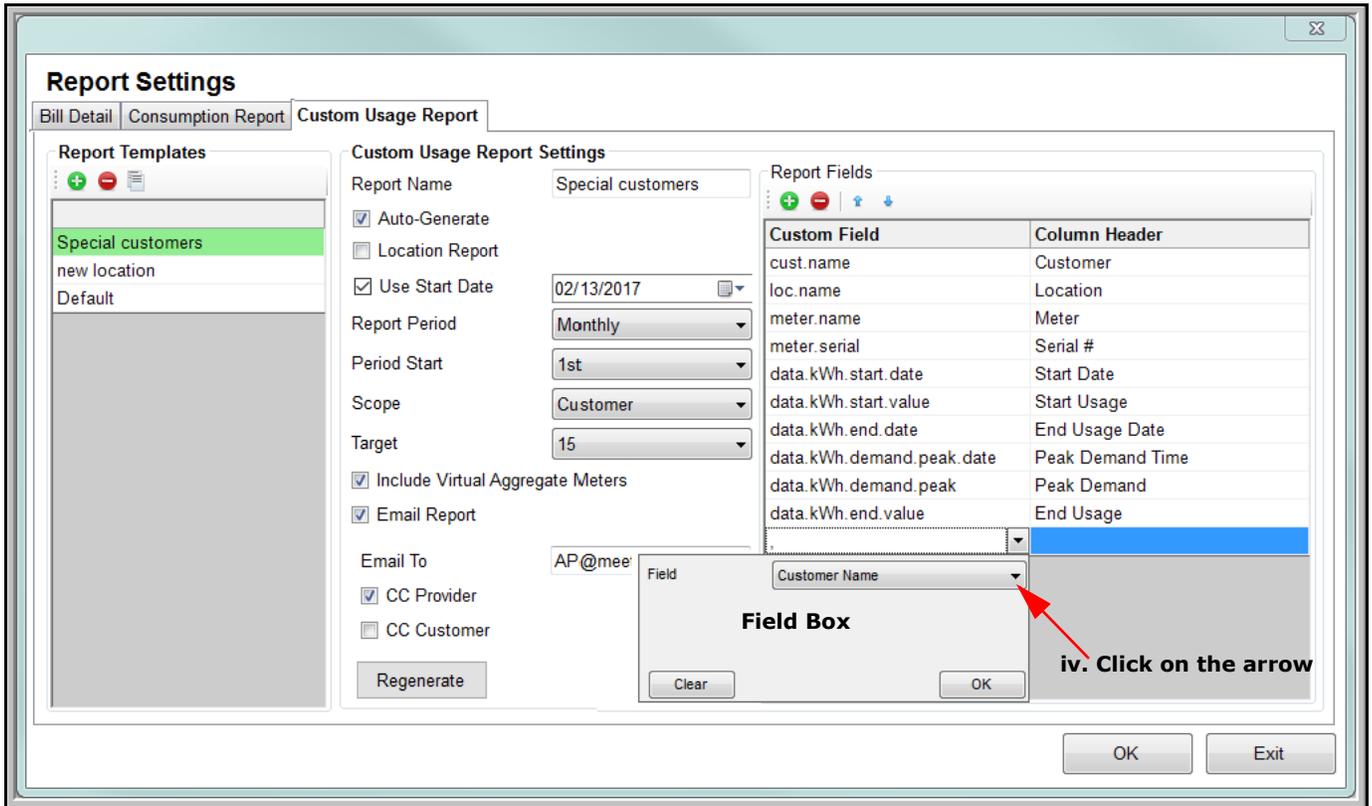
- Report Fields: The Report Fields box lets you set up the actual data and report headings that will be in the report, called Custom Field and Column Header in the screen.
 - i. Click the green plus sign icon.
 - ii. A blank line is added in the Custom Field section.

i. Click on the green plus sign icon to add a field

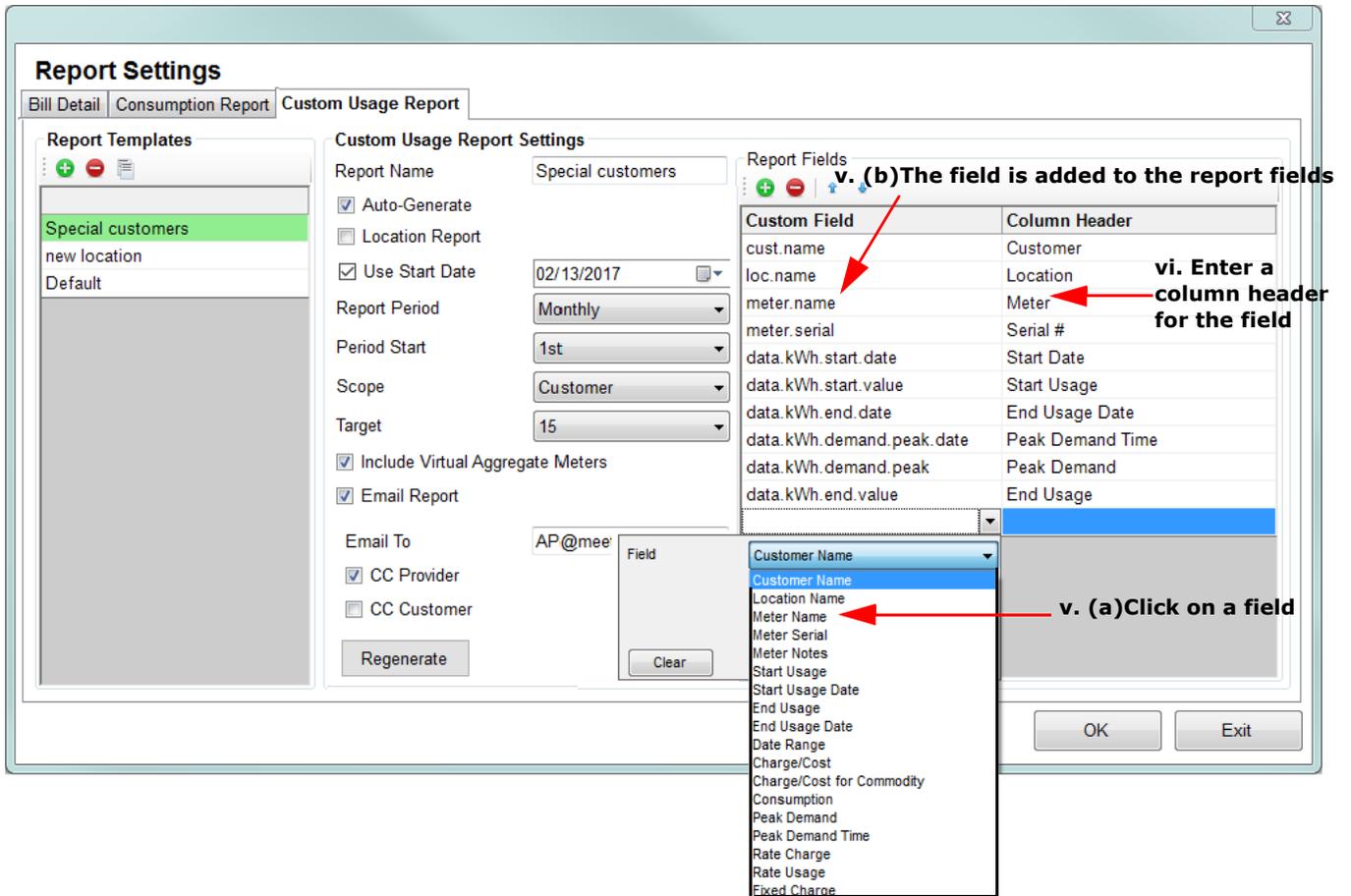


iii. Click on the arrow in the blank line in Column Field.

iv. A Field box opens. Click on the arrow in the box.



- v. The available data fields are shown in the list that is displayed - see the example screen, below. (a) Click on a field to (b) add it to the blank line in the Custom Fields section.



- vi. Enter a Column Header for the field. See the example fields and headers in the screen, above. The name you enter in the column header field will be the column heading in the CSV file.
 - You can remove a field by clicking on its line and clicking the red minus sign icon.
 - The up and down arrow icons let you move a field up or down in the list, to change where it appears in the report.
- Preview: You can generate a preview of the report by clicking the Preview button. The report will be opened in Excel. This lets you see how the report will look when it is generated.

- Regenerate: You can generate old reports after a report has already been generated by clicking Regenerate and entering the start date. Any reports from that date and after it will be regenerated, and emailed, if configured to be emailed.

d. Click OK to save your selections. You will be returned to the Provider Configuration screen.

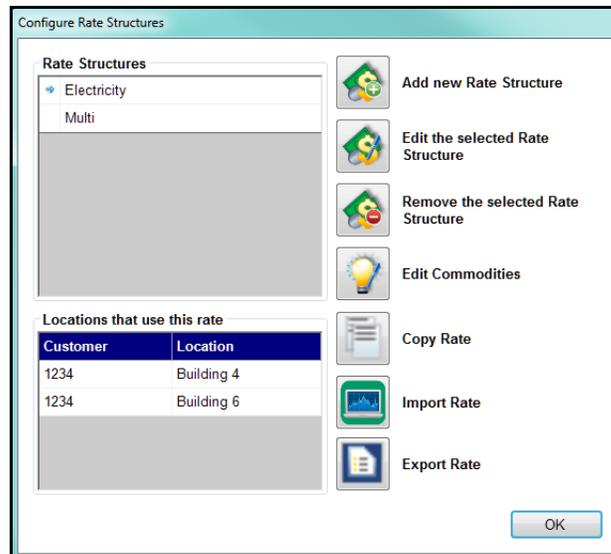
5. Click Store to save your entries and then click Exit to close the screen.

4.2: Set Up Rate Structures

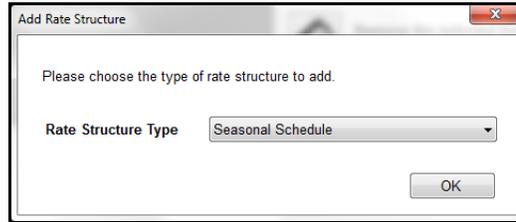
The next step is creating rate structures that will be applied to billed usage at locations.

- A rate structure is the way in which energy usage costing is calculated in monetary numbers. For example, if in an American jurisdiction, the rates will be set up in US dollars.
- Each utility has a different method of calculating rates for electrical usage. For this reason, the user can set up the rate structure to mimic what the utility is generally doing.
- You can set up one rate structure for each commodity at a location.
- Multiple locations can use the same rate structure.

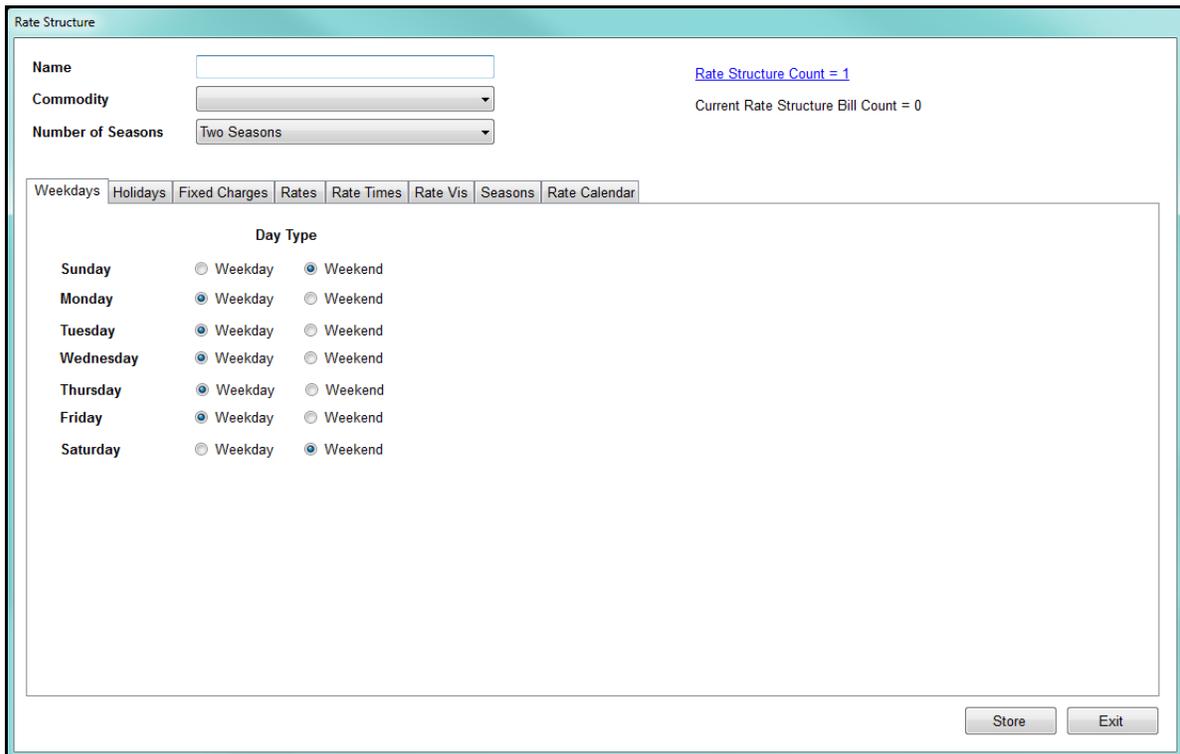
1. From the Settings Editor main screen, click the Edit Rate Structures icon.



2. If you have already set up rate structures, you will see those in the box on the left. To add a new rate structure, click the Add New Rate Structure icon.



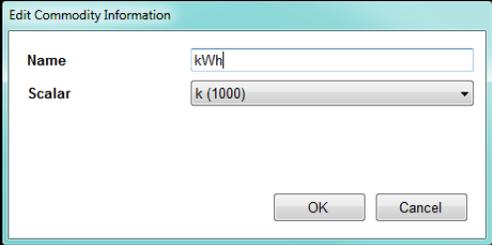
3. Select Seasonal Schedule or Flat Rate from the pull-down menu and click OK.
 - Select Seasonal Schedule to set up a rate structure with different rates for different times of the day, week, and/or year. Then continue with step 4.
 - Select Flat Rate to set up a rate structure with a single rate only (no On Peak/Off Peak, Seasons, Weekend/Weekday or Holiday rates). Then go to step 6.



4. After selecting Seasonal Schedule, you'll see the screen above. Use this screen to set up all of the information for this rate. Do the following:

- Enter a name for the rate structure; this name will appear on the bill.
- Select Commodity from the pull-down menu. A commodity is a usage value the software uses when computing the rates for a bill from the imported Energy or other commodity data. You can select an existing commodity, or Create New. For Energy usage, select kWh. When the bill is generated, the software uses the rate structure for the commodity, e.g., kWh, to determine the charge for the amount of usage the customer has for the billing period, e.g., total kWh.

If you select Create New, you will see the screen shown below, which lets you set up a new commodity to use.



The screenshot shows a dialog box titled "Edit Commodity Information". It has two input fields: "Name" with the text "kWh" and "Scalar" with a dropdown menu showing "k (1000)". At the bottom right, there are two buttons: "OK" and "Cancel".

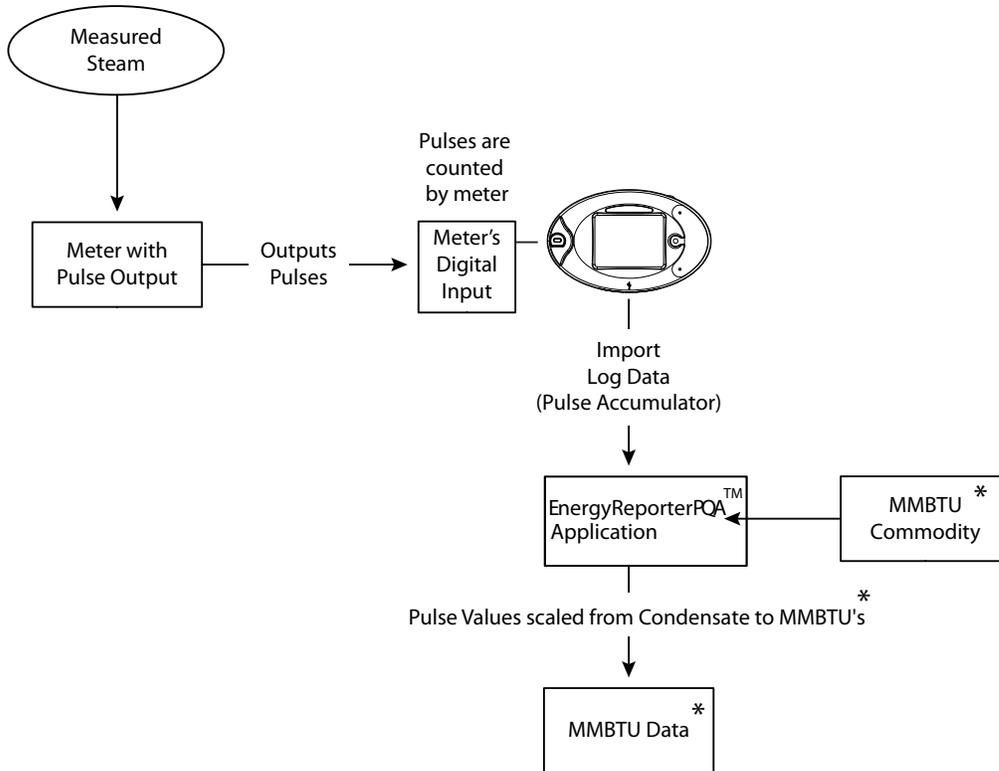
- a. Enter a name for the new commodity.
- b. Select the scalar from the pull-down menu - you can select Unit (1), k(1000), M(1000000) or Custom (Infinity). If you select custom, another field opens up on the screen for you to enter the Custom Scalar value.

The scalar you select is applied to the commodity's usage values for all of the meters. This is important because the meters themselves may have been set up with different scaling values. The scalar insures that the usage values will all be scaled the same way in the EnergyReporterPQA™ application.

When you are tracking usage other than Energy, a custom scalar can be used to change the unit measured. For example, if you are tracking Condensate (steam), the meter's pulse accumulator channel, i.e., Digital Input, records the number of pulses coming from the Condensate meter which is

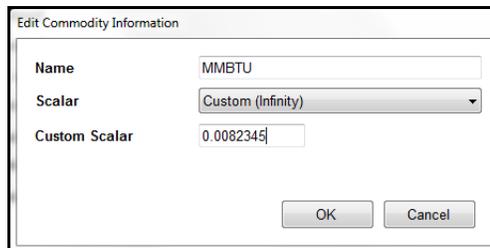
measuring the steam directly. But you may need to convert the pulse accumulation value to MMBTUs for your billing. In this case, you would use the scalar to convert the number of pulses to the MMBTU usage value. See the figure and example screen on the next page.

Pulse Accumulation Measurement Example
 -This example converts measured condensate to MMBTU's



* To convert condensate to MMBTU, configure the scalar for the commodity.
 This value should be the value to convert 1 pulse to MMBTU.
 For example, if 1 pulse = 1 kgallon of steam, and 1 gallon of steam equals 8.2345 MMBTU, then the scalar should be 0.0082345.

Figure 4.2: Scalar Example for Commodities Other Than Energy



c. Click OK to save your entries and close the screen (click Cancel if you want to close the screen without saving your entries).

- The other settings for rate structure are as follows:

Seasons Setting

Some utility companies bill their customers higher rates at different times of the year. The reason for this is that it may be more costly for utilities to generate or buy electricity during peak seasons.

The Seasons setting lets you set up different rates for up to four different times of the year that you may need in your rate jurisdiction. Select the number of seasons from the pull-down menu. If you select more than one season, you will see a Seasons tab that you will use to set the seasons' dates. You use the Rates tab to set different On-Peak and Off-Peak rates for each season, and you use the Rate Times tab to assign On-Peak and Off-Peak to different days and times of the day, for each season.

The screenshot shows the 'Rate Structure' application window. At the top, there are fields for 'Name' (GS-1), 'Commodity' (kWh), and 'Number of Seasons' (Four Seasons). To the right, it displays 'Rate Structure Count = 1' and 'Current Rate Structure Bill Count = 0'. Below these are several tabs: Weekdays, Holidays, Fixed Charges, Rates, Rate Times, Rate Vis, Seasons, and Rate Calendar. The 'Seasons' tab is active, showing two columns of settings. The left column, 'Season Names', lists Season One (Summer), Season Two (Winter), Season Three (Season Three), and Season Four (Season Four). The right column, 'Season Transition Dates', lists Season One Start Date (March 21), Season Two Start Date (June 21), Season Three Start Date (September 21), and Season Four Start Date (December 21). At the bottom right, there are 'Store' and 'Exit' buttons.

NOTE: The Monthly setting for Number of Seasons allows for a different season to be applied to each month of the year. Each monthly season applies from the first of the month to the first of the next month. For example, the July season will apply from July 1st to August 1st. The Seasons tab for the Monthly setting shows all twelve seasons.

Weekdays/Weekends

A weekday is usually billed at a higher time of use rate than a weekend. For this reason, you can select what days are designated as a weekend in your jurisdiction.

Click the Weekdays tab to designate days as weekday or weekend (this is the tab view you see when the screen first opens). You use the Rates tab to set different rates for weekends and weekdays.

The screenshot shows the 'Rate Structure' application window. At the top, there are three input fields: 'Name' (GS-1), 'Commodity' (kWh), and 'Number of Seasons' (Four Seasons). To the right, it displays 'Rate Structure Count = 1' and 'Current Rate Structure Bill Count = 0'. Below these fields is a tabbed interface with the following tabs: Weekdays, Holidays, Fixed Charges, Rates, Rate Times, Rate Vis, Seasons, and Rate Calendar. The 'Weekdays' tab is active, showing a 'Day Type' section with radio buttons for each day of the week. The configuration is as follows:

Day	Weekday	Weekend
Sunday	<input type="radio"/>	<input checked="" type="radio"/>
Monday	<input checked="" type="radio"/>	<input type="radio"/>
Tuesday	<input checked="" type="radio"/>	<input type="radio"/>
Wednesday	<input checked="" type="radio"/>	<input type="radio"/>
Thursday	<input checked="" type="radio"/>	<input type="radio"/>
Friday	<input checked="" type="radio"/>	<input type="radio"/>
Saturday	<input type="radio"/>	<input checked="" type="radio"/>

At the bottom right of the window, there are 'Store' and 'Exit' buttons.

Holidays

A holiday is a day that is billed at a different rate than a weekday or a weekend. Typically, it is considered an off-peak time, which will be billed at a lower rate.

The EnergyReporterPQA™ application configures holidays based on a perpetual calendar. A perpetual calendar allows you to set up the holidays once and from then on have the software determine all the future holidays based on the rules you set up.

You can set up different Holiday rates for different seasons.

Click the Holidays tab.

Rate Structure

Name: SCE TOU-8-B Rate Structure Count = 1

Commodity: kVAR Current Rate Structure Bill Count = 0

Number of Seasons: Two Seasons

Weekdays | **Holidays** | Fixed Charges | Rates | Rate Times | Rate Vis | Seasons | Rate Calendar

Holiday	Rule	Example
January 1st	1st of January	1/1/2016
Easter	Easter	3/27/2016
Memorial Day	Last Monday of May	5/30/2016
July 4th	4th of July	7/4/2016
Labor Day	First Monday of September	9/5/2016
Veterans Day	11th of November	11/11/2016
Thanksgiving	Fourth Thursday of November	11/24/2016
Christmas	25th of December	12/26/2016

Add new Holiday
 Edit selected Holiday
 Remove selected Holiday

Store Exit

Use this screen to designate days that will use the Holiday rate. Once you set up the holidays you use the Rates tab to enter the Holiday rate.

- a. Click the Add New Holiday icon.

Edit Holiday

Holiday Name:

Every Nearest Monday Nearest Weekday
 The of
 Specific Day
 Special Days

OK Cancel

- b. Enter a name for the holiday.

c. You have these options for setting up the holiday:

- Click the radio button next to Every and select the month and day from the pull-down menus, e.g., January 1. The nearest Monday and Nearest Weekday checkboxes are used for holidays that are changed to another day of observance if they fall on a Saturday or Sunday. If the holiday will be celebrated on the following Monday if it falls on a weekend, click the Nearest Monday checkbox. If the holiday will be celebrated on the nearest weekday if it falls on the weekend (i.e., Friday if the holiday falls on Saturday, or Monday if it falls on Sunday), click the Nearest Weekday checkbox.
- Click the second radio button and select First, Second, Third, Fourth, Fifth, or Last from the first pull-down menu; select the day of the week from the second pull-down menu; and select the month from the third pull-down menu, e.g., The Third Thursday in November for U.S. Thanksgiving Day.
- Click the radio button next to Specific Day and click the pull-down menu to open a calendar that lets you choose the day of the holiday that only occurs once.
- Click the radio button next to Special Days to select a holiday that doesn't follow any of the above rules, such as Easter.

d. Click OK to save the holiday and return to the Holidays tab screen.

NOTES:

- To edit a holiday, click on the holiday in the list and click the Edit Selected Holiday icon. You will see the same screen as when you are adding a holiday, but it will show the holiday's settings. Change what you want and click OK to save the changes.
- To delete a holiday, click on the holiday in the list and click the Remove Selected Holiday icon. You will see a Confirmation window asking if you are sure you want to remove the holiday - click Yes to remove; click No to keep the holiday.

Fixed Charges

A fixed charge is a charge that is added onto the bill.

Click the Fixed Charges tab to configure single charges you want to be applied to the commodity when the bill is generated.

Rate Structure

Name: Rate Structure Count = 1

Commodity: Current Rate Structure Bill Count = 0

Number of Seasons:

Weekdays | Holidays | **Fixed Charges** | Rates | Rate Times | Rate Vis | Seasons | Rate Calendar

Name	Season	Type	Rate
CTC		Flat Rate	0.00505
DA CRS DWR bond		Flat Rate	0.00505
Noble Americas		Flat Rate	0.067375
Noble Regents Admin		Flat Rate	0.00075
PCIA		Flat Rate	0.01423
Peak Demand		Peak Demand	11.84

 Add Fixed Charge

 Edit selected Fixed Charge

 Remove selected Fixed Charge

 Up

 Down

Store Exit

You can add a fixed charge, edit an existing fixed charge, or remove an existing fixed charge. You can also assign the fixed charges to any of the seasons you have set up. Use Up and Down arrows to navigate up and down in the list.

a. Click the Add Fixed Charge icon. You will see the screen shown below.

Fixed Charges

Charge Type Flat Rate

Apply To Season All Seasons

Flat Rate Name DA CRS DWR bond

Flat Rate 0.00505

A Flat Rate is a charge which applies to the total usage, such as a Generation Charge, or a Fuel Surcharge. The rate is multiplied by the total usage for the commodity.

OK Cancel

b. Select the Charge Type from the pull-down menu. You can select Fixed, **TOU Peak Demand**, Flat Rate, Tax, Coincidental Peak Demand, Tiered Rate, Tiered Fixed Rate, or Daily Charge:

- Fixed: select this to add a single charge that is added to the bill when it is generated, regardless of the usage amount, e.g., processing fee.
- **TOU Peak Demand**: select this to enter a **Peak Demand surcharge**, which is an additional charge applied to Peak (highest amount) demand during the billing period (see step d).
- Flat Rate: select this to add a charge that applies to the total usage, e.g., a Generation charge or Fuel surcharge. This rate is multiplied by the total usage when the bill is generated.
- Tax: select this to enter a tax percentage that will be applied to the total when the bill is generated, i.e., multiplied by the total dollar amount on the bill for the commodity, and added to the bill.

- **Coincidental Peak Demand:** select this to compute the Peak Demand time from a meter at another location, e.g., a Utility meter. The time of the charge comes from the Utility meter, but the charge is applied to the sum of the location's meter(s)' usage. See the example on page 5-18.
- **Usage Tiered Rate:** select Usage Tiered Rate to input charges that are dependent on the amount of usage during the Bill period. For example, a multiple tiered rate may be defined to encourage energy conservation by charging higher rates for customers that exceed what is considered typical consumption.
- **Usage Tiered Fixed Rate:** select Usage Tiered Fixed Rate to input a service charge or tax which applies to the Tiered Rates. The rate is added to the bill when a tier level is reached.
- **Daily Charge:** select this to add a fixed charge to the total usage, based on the number of days in the billing period. The bill charge will be the Daily Charge rate multiplied by the number of days in the billing period.

- c. For charge types Fixed, Flat Rate, and Taxed, you must enter the Charge Name, select what season(s) to apply it to from the pull-down menu, and enter the Rate (or Percentage for Tax).

The screenshot shows a dialog box titled "Fixed Charges" with the following fields and annotations:

- Charge Type:** A dropdown menu showing "Flat Rate". A red arrow points to it with the text "Click to select fixed charge".
- Apply To Season:** A dropdown menu showing "All Seasons". A red arrow points to it with the text "Click to select season(s)".
- Flat Rate Name:** A text input field containing "DA CRS DWR bond". A red arrow points to it with the text "Enter name".
- Flat Rate:** A text input field containing "0.00505". A red arrow points to it with the text "Enter rate".
- OK Button:** A button labeled "OK" at the bottom right. A red arrow points to it with the text "Click OK".

Below the input fields, there is a descriptive text: "A Flat Rate is a charge which applies to the total usage, such as a Generation Charge, or a Fuel Surcharge. The rate is multiplied by the total usage for the commodity."

d. If you select **TOU Peak Demand**, the screen changes as shown below.

Fixed Charges

Charge Type: TOU Peak Demand

Apply To Season: All Seasons

TOU Peak Demand Name: Peak Demand

TOU Peak Demand Rate: 0.02

Apply To:

- Season One holiday
- Season One Off Peak
- Season One On Peak
- Season Two holiday

A Peak Demand Charge is a charge applied against the aggregate Peak Demand over the period of the bill. The Name is the label that will be shown for the charge on the bill, and the rate is multiplied by the Peak Demand to get the monetary charge. The apply to rate is the rate rule which is considered the 'Peak' intervals.

OK Cancel

The charge's name defaults to **Peak Demand**, though you can change it if you want. The name appears on the bill next to the **Peak Demand charge**.

e. Select the season(s) to apply the **Peak Demand** charge to, enter the **Peak Demand rate**, and click the checkbox(es) (rate periods) you want the Peak Demand rate applied to. You can apply it to Holiday, Peak and/or Seasonal Off Peak usage. The Peak Demand rate you enter will be applied to peak demand in the selected rate periods when the bill is generated, i.e. the Peak Demand usage is multiplied by the Peak Demand rate to get the Peak Demand charge.

f. **Coincidental Peak Demand** is a charge applied against the Peak Demand over the period of the bill, where the Peak Demand is computed based on the configured Utility meter, rather than the meters at the location.

For example: 2 locations, with 4 meters, total.

Location 1 has 1 meter, which is the Utility meter that the Peak Demand is based on. The demand values for this meter are shown in the table below.

Time	kWh Reading
12:00	15kWh
12:15	17kWh
12:30	16kWh
12:45	14kWh

Location 2 has 3 meters. The meters' demand values are shown in the table below.

This is the time of the Utility meter's Peak Demand



Time	kWh Reading		
	Meter 1	Meter 2	Meter 3
12:00	7kWh	8kWh	3kWh
12:15	4kWh	3kWh	1kWh
12:30	5kWh	1kWh	8kWh
12:45	15kWh	20kWh	9kWh



The values in this row are added together and then will have the fixed rate charge applied to them

When the Coincidental Peak Demand fixed charge is set up using the Utility meter, and this rate structure is applied to Location 2, a bill generated for Location 2 will have a Coincidental Peak Demand value of $(4+3+1) 8\text{kWh}$ x the fixed charge rate, since the Peak Demand at meter 1 (Location 1) is at 12:15.

NOTE: The Utility meter can be at any location.

Fixed Charges

Charge Type: Coincidental Peak Demand

Apply To Season: All Seasons

Coincidental Peak Demand Name: Peak Demand

Coincidental Peak Demand Rate: 0.03

Coincidental Utility Meter: Sample Customer @ 1800 St

A Coincidental Peak Demand Charge is a charge applied against the Peak Demand over the period of the bill, where the Peak Demand is computed on the configured Utility Meter, rather than the aggregation of the meters at the location.

OK Cancel

After selecting Coincidental Peak Demand, select the season(s) to apply it to, enter a Name and Rate for the Coincidental Peak Demand, and then choose the coincidental Utility meter from the pull-down menu.

- g. **Usage Tiered Rate:** a tiered rate gets higher (more expensive) as the amount of energy consumed increases. This rate type is typically used to encourage customers to conserve usage. You would use the Tiered Rate option to set up charges that vary depending on the amount of usage during the Bill period, charging higher rates when their usage exceeds a certain amount.

Fixed Charges

Charge Type: Usage Tiered Rate

Usage Tiered Rate Name: Tiered Rate

Buttons: Add Range, Remove Range, Add Tier, Remove Tier

Tier Ranges	Tiers	Rates
A1: 0 - 1000	1000	0.01
A2: 1000 - 2000	2000	0.02
A3: Over 2000		0.03

Tiered Rates are charges that vary depending on the amount of usage. For each Tier, add the upper usage for that Tier, and the rate to be applied to that usage. Usage over the highest Tier will be automatically computed. Adding Ranges allows finer billing detail. Each range can have a unique tier structure.

Buttons: OK, Cancel

- i. Give the Tiered Rate a name, and enter the tiers information: the highest amount of usage in the tier (entered in the Tiers field) and the rate for the tier (entered in the Rates field). Note that the tiers all have an alphanumeric identifier (A1, A2, and A3 in the above screen). This identifier will show on the customer's bill.

NOTE: The Tiered Rate screen's default starts with 3 tiers and an overage tier (unnumbered.) Click the Add Tier button to add a tier and then enter the upper usage amount and rate for the tier. You can click the Remove Tier button to remove a tier.

For example, in the screen above, tier 1's rate of \$0.01 is applied to usage up to 1000, tier 2's rate of \$0.02 is applied to usage from 1001 - 2000, and the tier 3's rate of \$0.03 is applied to usage from

2001 up.

Let's say the commodity is kWh. Since the rate is multiplied by the amount of usage to get the final charge, you can see the effect of the tiered rate charges in the following table:

Customer	kWh Usage	Tiered Rate Surcharges	Added to Monthly Bill
#1	900	A1: \$0.01 x 900	\$9.00
#2	1500	A1: \$0.01 x 1000 A2: \$0.02 x 500	\$20.00
#3	2500	A1: \$0.01 x 1000 A2: \$0.02 x 1000 A3: \$0.03 x 500	\$35.00

- ii. If you need even more flexibility in creating rates, you have the option of creating Multi-range Tiers. Multi-range Tiers have tier bins within the range, letting you set up incremental charges within the overall tier range. For instance, in the example on the previous page, if you use the Multi-range Tiers option, you can add tier bins of 0-500, 500 to 750, and 750 and up to 900, the upper limit of the tier range, and you assign charges for usage to these tier bins.

- iii. To use this feature, click the Add Range button above the table. The screen changes as shown below.

The screenshot shows a dialog box titled "Fixed Charges" with the following fields and controls:

- Charge Type:** Usage Tiered Rate (dropdown menu)
- Usage Tiered Rate Name:** Tiered Rate (text input)
- Buttons:** Add Range, Remove Range, Add Tier, Remove Tier

Tier Ranges	Tiers	Rates
[-] A: 0 - 0	0	
A1: 0 - 0	0	0
[-] B: Over 0		
B1: 0 - 1000	1000	0.01
B2: 1000 - 2000	2000	0.02
B3: Over 2000		0.03

Tiered Rates are charges that vary depending on the amount of usage. For each Tier, add the upper usage for that Tier, and the rate to be applied to that usage. Usage over the highest Tier will be automatically computed. Adding Ranges allows finer billing detail. Each range can have a unique tier structure.

Buttons: OK, Cancel

- iv. Every new range (A in the above screen) starts with one tier bin (A1 in the above screen). Enter the upper range of the tier bin and add tiers as needed, by clicking Add Tier and defining the tier values (range and rate). The rows will auto-sort as you enter the tier levels.
- v. Remove a Range by highlighting the Tier Range and clicking the Remove Range button.

Note that you must have at least one Tier bin and the overage bin for a Tier Range.

- h. **Usage Tiered Fixed Rate:** Tiered fixed rate is a fixed charge for a certain amount of usage. It differs from tiered ranges since there is no multiplication needed to arrive at the charge; for e.g., if there is a tier bin for usage up to 1000, with a charge of 0.10, then the 0.10 is just added to the bill for any usage that falls within that Tier Bin. It also gives you more flexibility than Fixed rate, since the rate can be increased for higher usage.

The screenshot shows a 'Fixed Charges' configuration window. At the top, there are dropdown menus for 'Charge Type' (set to 'Usage Tiered Fixed Rate') and 'Apply To Season' (set to 'All Seasons'). Below these is a text field for 'Usage Tiered Fixed Rate Name' containing 'Tiered Fixed Rate'. There are four buttons: 'Add Range', 'Remove Range', 'Add Tier', and 'Remove Tier'. A table with three columns: 'Tier Ranges', 'Tiers', and 'Rates' is displayed. The table contains four rows of data. Below the table is a text box explaining that a Tiered Fixed Rate is a service charge or tax which applies to the Tiered Rates, and that the rate defined is added to the bill when a tier level is reached. At the bottom right are 'OK' and 'Cancel' buttons.

Tier Ranges	Tiers	Rates
A1: 0 - 1000	1000	0
A2: 1000 - 2000	2000	0
A3: 2000 - 3000	3000	0
A4: Over 3000		0

Tiered Fixed Rate is a service charge or tax which applies to the Tiered Rates. The rate defined is added to the bill when a tier level is reached. Adding Ranges allows finer billing detail. Each range can have a unique tier structure.

- i. Enter the upper usage for the tier in the Tier Bin field and enter the fixed charge in the Fixed Rate field. You can add additional tier bins by clicking the Add Tier button or delete a tier bin by clicking the Remove Tier button.

- ii. If you want to create scaled incremental charges in between the Tier bins' upper ranges, click the Add Range button.

Tier Ranges	Tiers	Rates
A: 0 - 0		
..... A1: 0 - 0	0	0
B: Over 0		
..... B1: 0 - 1000	1000	0
..... B2: 1000 - 2000	2000	0
..... B3: 2000 - 3000	3000	0

Tiered Fixed Rate is a service charge or tax which applies to the Tiered Rates. The rate defined is added to the bill when a tier level is reached. Adding Ranges allows finer billing detail. Each range can have a unique tier structure.

- iii. Every new range (A in the above screen) starts with one tier bin (A1 in the above screen). Enter the upper range of the tier bin and add tiers as needed, by clicking Add Tier and defining the tier values (range and rate). The rows will auto-sort as you enter the tier levels.
- iv. Remove a Range by highlighting the Tier Range and clicking the Remove Range button.

Note that you must have at least one Tier bin and the overage bin for a Tier Range.

- i. Click OK to save your settings and return to the Fixed Charges tab screen. Your new charge is listed on the screen.

NOTES:

- To edit a charge, click on the charge in the list and click the Edit Selected Fixed Charge icon. You will see the same screen as when you are adding a fixed charge, but it will show the charge's settings. Change what you want and click OK to save the changes.

- To delete a charge, click on the charge in the list and click the Remove Selected Fixed Charge icon. You will see a Confirmation window asking if you are sure you want to remove the charge - click Yes to remove; click No to keep the charge.

Rates

Rates are the amount of money charged per usage commodity. For instance, with electricity, the rate is usually an amount of cents per kWh. On Peak rates often cost more than Off Peak rates. If you are not using Time of Use based rates, then set only one rate and amount. The charge per unit is in dollars and cents, so for 5 cents, enter 0.05.

Click the Rates tab to configure specific rates: by Default, On Peak, Off Peak, and Holiday rates. If you have set up seasons, you can configure rates for each season; you can also configure Holiday rates for each season. The rates will be applied to the usage when the bill is generated, e.g., if you set a rate for Season 1 Off Peak, that rate is applied to all usage that occurs during Off Peak times, during the period designated as Season 1.

Rate Structure

Name: SCE TOU-8-B Rate Structure Count = 1

Commodity: kVAR Current Rate Structure Bill Count = 0

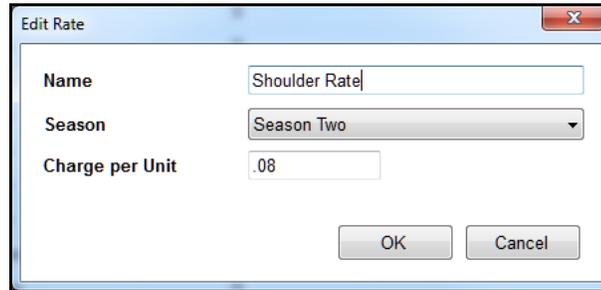
Number of Seasons: Four Seasons

Weekdays | Holidays | Fixed Charges | **Rates** | Rate Times | Rate Vis | Seasons | Rate Calendar

Rate	Season	Charge per unit
→ Holiday		0.01391
Mid Peak	Season One	0.01391
Off Peak	Season One	0.01391
Mid Peak	Season Two	0.01396
Off Peak	Season Two	0.01393
On Peak	Season Two	0.01396
Holiday	Season Three	0.01392
Off Peak	Season Three	0.01392
On Peak	Season Three	0.01396
Holiday	Season Four	0.01394
Off Peak	Season Four	0.10394
On Peak	Season Four	0.01397

Add Rate
 Edit selected Rate
 Remove selected Rate

- a. If you want to use more rates than Off Peak and On Peak, click the Add Rate icon.



The screenshot shows a dialog box titled "Edit Rate". It has a close button (X) in the top right corner. The dialog contains three input fields: "Name" with the text "Shoulder Rate", "Season" with a dropdown menu showing "Season Two", and "Charge per Unit" with the text ".08". At the bottom of the dialog are two buttons: "OK" and "Cancel".

- b. Enter a name for the rate; select the Season the rate will be applied to (if you selected only one season, you will only be able to choose Season One); enter the charge per unit. For Energy usage, this is the charge per kWh.
- c. Click OK to save the rate and return to the Rates tab screen. The rate you added is now listed in the screen. Make sure you assign Rate Times for this new rate (see the next page).

NOTES:

- To edit a rate, click on the rate in the list and click the Edit Selected Rate icon. You will see the same screen as when you are adding a rate, but it will show the rate's settings. Change what you want and click OK to save the changes.
- To delete a rate, click on the rate in the list and click the Remove Selected Rate icon. You will see a Confirmation window asking if you are sure you want to remove the rate - click Yes to remove; click No to keep the rate. If you delete a rate, the rate times assigned to it (see the following section) are reassigned to the next available rate.

Rate Times

Click the Rate Times tab to assign different times of the day as on-peak or off-peak, for billing purposes. You set on-peak and off-peak times for both weekdays and weekends, as well as for all the seasons you set up for this rate structure. These settings are used to generate the bill by identifying which rate is applied to the usage for the specific time period, e.g., if you set Season 1 Weekend time intervals as all Off Peak, then any usage for Season 1 weekends is charged the Off Peak rate.

Rate Structure

Name: [Rate Structure Count = 1](#)

Commodity: Current Rate Structure Bill Count = 0

Number of Seasons:

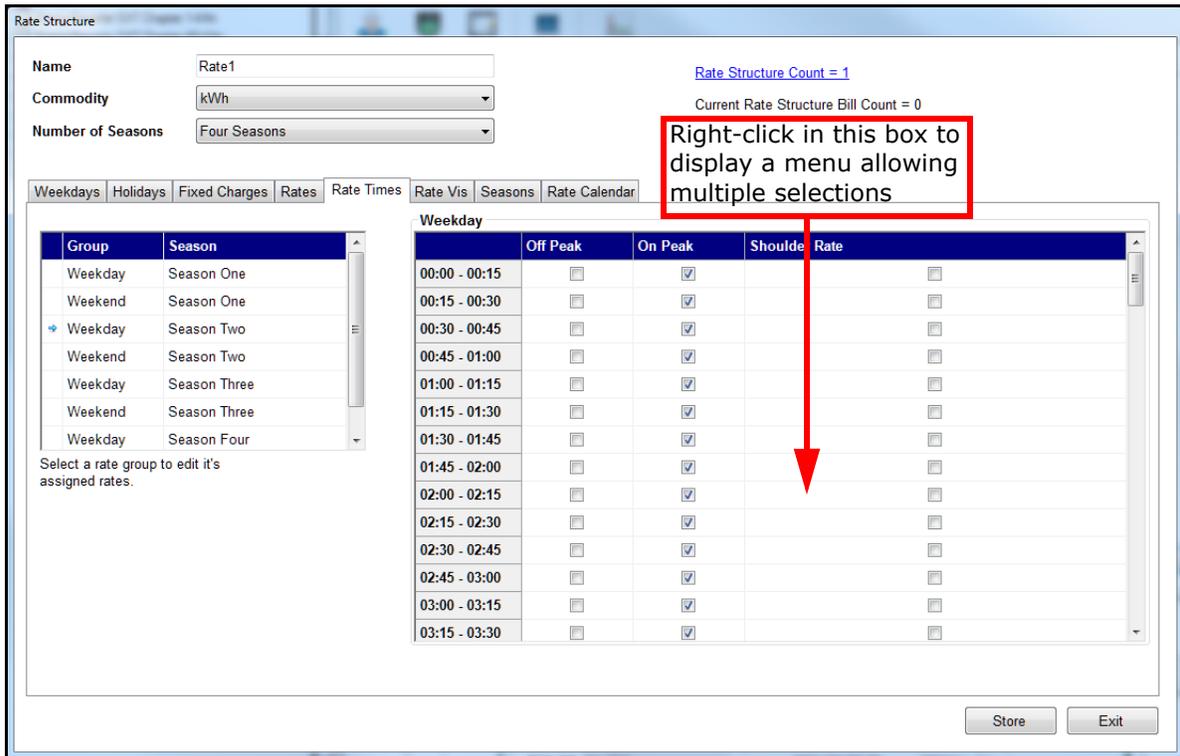
Weekdays | Holidays | Fixed Charges | Rates | **Rate Times** | Rate Vis | Seasons | Rate Calendar

Group	Season
Weekday	Season One
Weekend	Season One
Weekday	Season Two
Weekend	Season Two
Weekday	Season Three
Weekend	Season Three
Weekday	Season Four

Select a rate group to edit it's assigned rates.

Store Exit

- a. Click on one of the groups to display its settings on the right side of the screen.



- b. Click in the Off Peak, On Peak, or other defined Peak (Shoulder Rate in the above screen) box next to a time range to change its setting. You also have the following multiple selection options:

- You can right-click in the box on the right and select "Set all rate times to either" Off Peak or On Peak.
- You can select multiple time ranges by clicking on the first rate time you want to change, then holding down the Shift key and clicking on the last rate time you want to change: the rate times you selected are now highlighted in blue. Then right-click in the box on the right and select "Set selected rate times to" either Off Peak or On Peak.

Seasons Tab

Click the Seasons tab to set up the dates for between two and four seasons. The dates for the seasons determine what rate is charged for usage in that time period. The rates are set up in the Rate Times tab, which was just explained. So, for example, if you set up two seasons, and you set a Weekday On Peak rate for Season 1 and a different Weekday On Peak rate for Season 2, the program checks the date of usage to see which rate should be applied.

NOTE: You will only see the Seasons tab if you selected more than one season.

The screenshot shows the 'Rate Structure' application window with the 'Seasons' tab selected. The window contains the following fields and controls:

- Name:** SCE TOU-8-B
- Commodity:** kVAR
- Number of Seasons:** Four Seasons
- Rate Structure Count:** 1
- Current Rate Structure Bill Count:** 0
- Navigation Tabs:** Weekdays, Holidays, Fixed Charges, Rates, Rate Times, Rate Vis, Seasons (selected), Rate Calendar
- Season Names:** Four text input fields labeled Season One, Season Two, Season Three, and Season Four. A red box highlights the 'Season Four' field with the text 'Enter Name for the Seasons' and an arrow pointing to the field.
- Season Transition Dates:** Four date selection fields labeled Season One Start Date, Season Two Start Date, Season Three Start Date, and Season Four Start Date. The dates are March 21, June 21, September 21, and December 21. A red box highlights the 'Season Four Start Date' field with the text 'Select Start Date for the Seasons' and an arrow pointing to the field.
- Buttons:** Store and Exit buttons at the bottom right.

a. Click in the pull-down menus to display a calendar you use to select the end date for each season. This is the last day the rates for that season are applied to usage.

b. In each entry field to the right of the season, specify the name to show on the bill for that season.

NOTE: If you selected the Monthly setting for the number of seasons, you will see twelve season fields. The default name of each season will be the month name, which can be changed. The duration of each season is from the first day through the last day of the month - this cannot be changed.

Rate Calendar

The rate calendar provides a graphical means of viewing the rates and the times they are applied to. This is useful to make sure that the system has been set up as you intended.

Rate Structure

Name: SCE TOU-8-B Rate Structure Count = 1

Commodity: kVAR Current Rate Structure Bill Count = 0

Number of Seasons: Four Seasons

Weekdays | Holidays | Fixed Charges | Rates | Rate Times | Rate Vis | Seasons | **Rate Calendar**

Rate Calendar

Monthly Rates - March 2016

3/17/2016

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Legend

Season One

- Off Peak
- On Peak
- Holiday

Season Two

- Off Peak
- On Peak

Daily Rates - Thursday, March 17, 2016

Season One

00:00 06:00 12:00 18:00 00:00

Rates

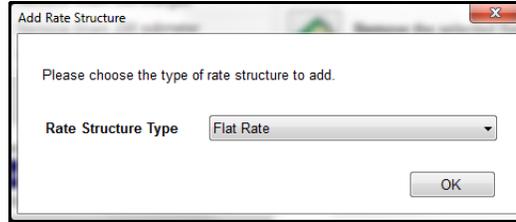
Rate	Charge per unit
On Peak	0

Store Exit

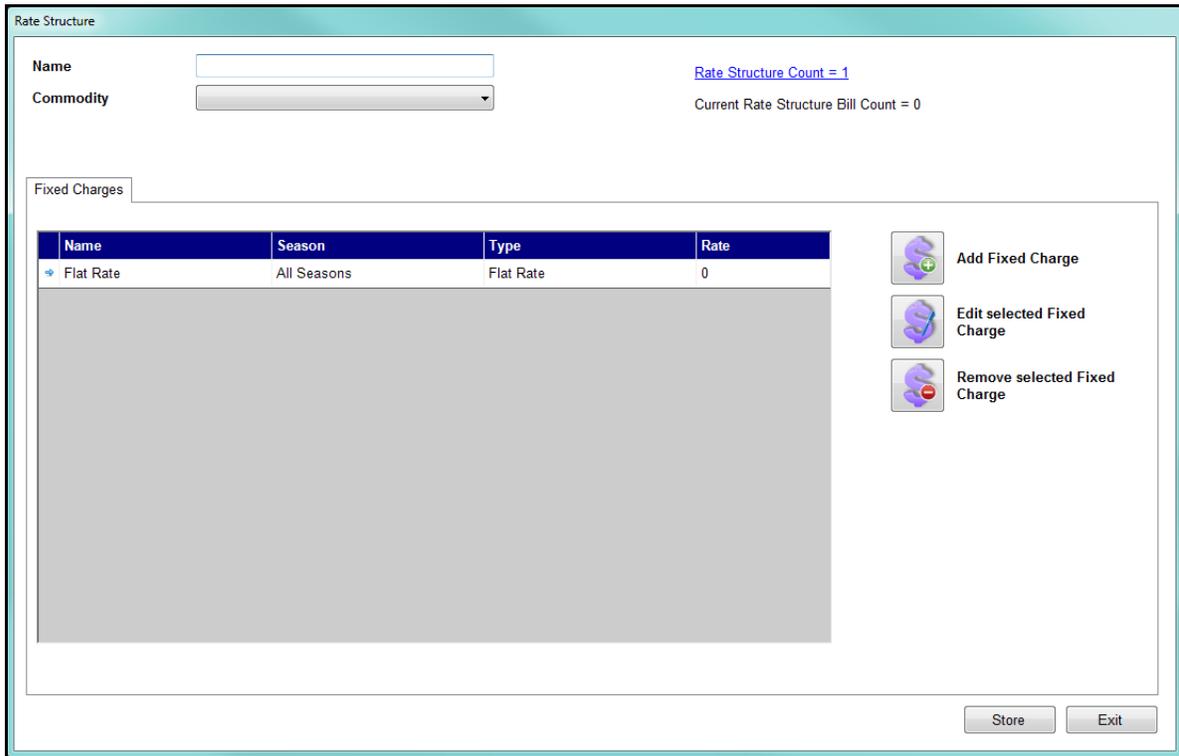
Review your rates on the rate calendar to make sure you have everything set up correctly.

- Click Store to save your rate structure. Instructions for setting up a Flat Rate schedule follow. If you do not need this information, continue to step h on page 4-31.

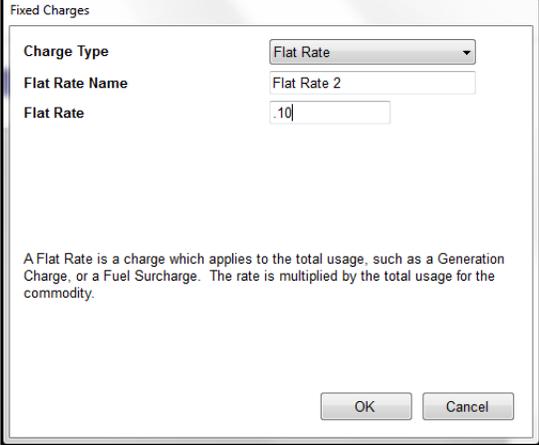
- To set up a rate structure with Fixed Charges only (no Time of Use, such as On Peak/Off Peak, Seasons, Weekend/Weekday or Holiday rates), select Flat Rate from the Add Rate Structure pull-down menu.



You will see a screen similar to the Fixed Charges tab of the Seasonal Schedule.



- a. Enter a Name for the Rate Structure, select the Commodity it will be applied to from the pull-down menu, and click Edit Selected Fixed Charge.



Fixed Charges

Charge Type: Flat Rate

Flat Rate Name: Flat Rate 2

Flat Rate: .10

A Flat Rate is a charge which applies to the total usage, such as a Generation Charge, or a Fuel Surcharge. The rate is multiplied by the total usage for the commodity.

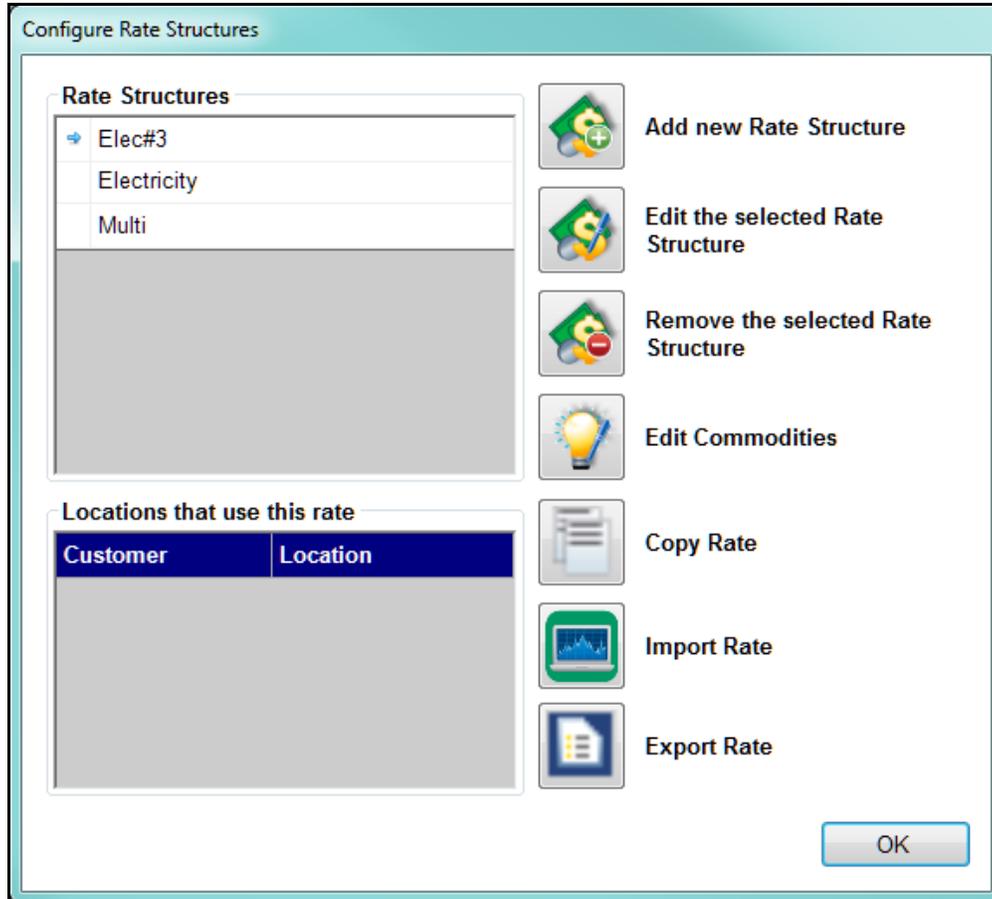
OK Cancel

- b. Keep the Charge Type as Flat Rate, and enter a Flat Rate Name and Rate.

- c. Click OK to save the fixed charge.

7. Click Store to save your Flat Rate rate structure.

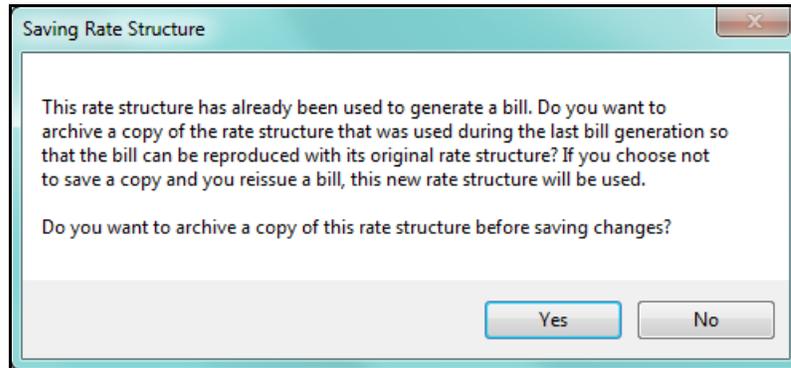
8. Click Exit to return to the Configure Rate Structures screen. Your new rate structure is now listed in the Rate Structures box and there is a new box called Locations That Use This Rate at the bottom left of the screen. Once you assign customer locations to this rate, they are listed in the box.



The Configure Rate Structures screen gives you additional options:

- To edit an existing rate structure, click on the rate structure and click the Edit the Selected Rate Structure icon. You will see the same screen as when you are adding a rate structure, but it will show the rate structure's settings. Change what you want and click OK to save the changes. Any new bills generated will use the changed settings.

- If you edit a rate structure that has already been used for the generation of a bill, you are given the opportunity to archive that rate structure in its pre-edited condition (click Yes to archive - see the screen capture, below). This way, previously generated bills may be reproduced using the rate structure that was in effect at the time the bill was originally generated.



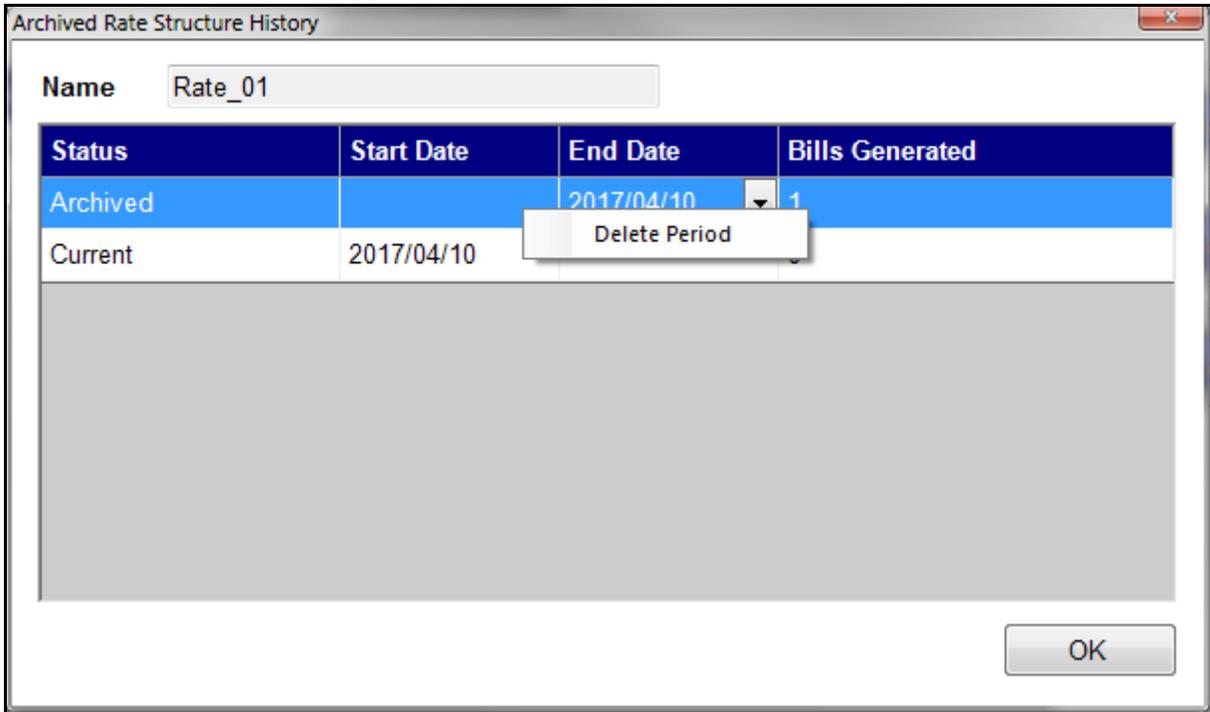
- If you choose not to archive the edited rate structure, a regenerated bill will use the rates defined in the current, edited rate structure.
- Once a rate structure has been archived, the archived copy may not be edited, again; though you can delete it or change its end date - instructions follow.
- If a rate structure has been archived, it will be used to generate cost data in the Usage Dashboard cost graphs for the billing periods when the archived rate structure was still in effect.
- When a rate structure has been archived, you can view the date range and bill count for the archive from the Archived Rate Structure History screen. Click the blue Rate Structure Count line, in the Rate Structure screen, to open the Archived Rate Structure History screen.

Rate Structure

Name	<input type="text" value="Electricity"/>	Click to open the Archived Rate Structure History screen	Rate Structure Count = 1
Commodity	<input type="text" value="kWh"/>		Current Rate Structure Bill Count = 1
Number of Seasons	<input type="text" value="Four Seasons"/>		

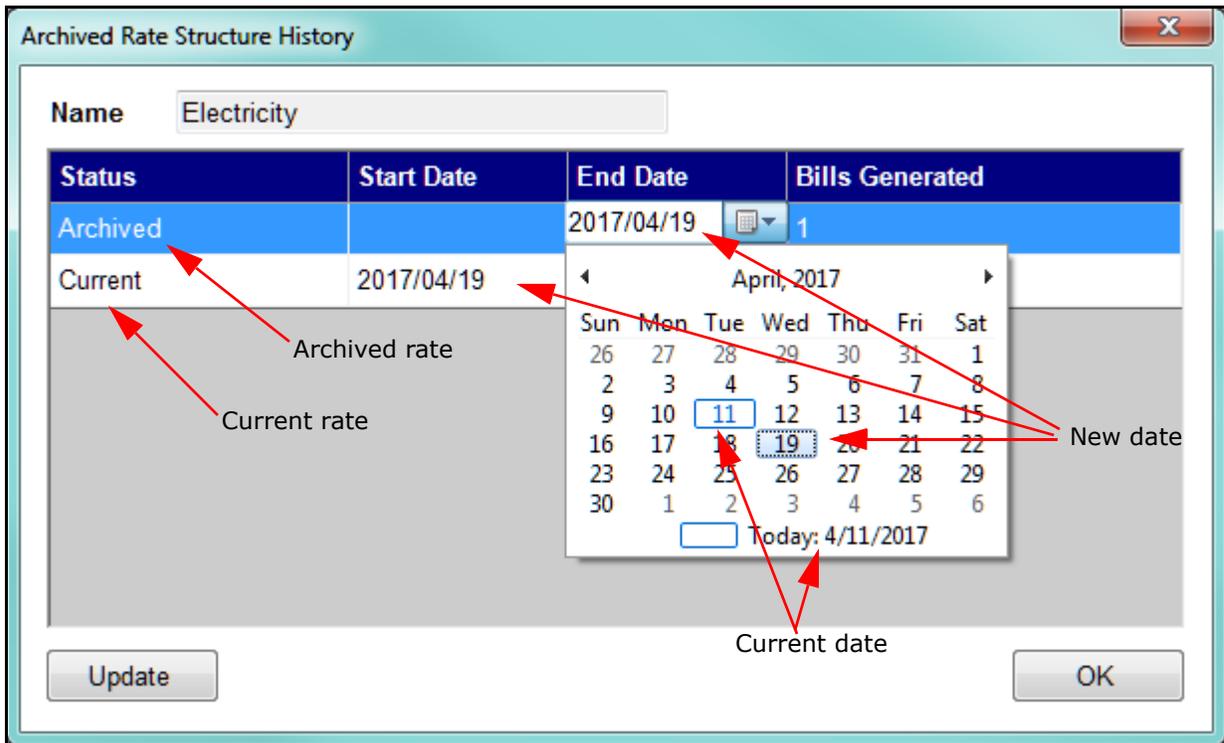
[Weekdays](#) | [Holidays](#) | [Fixed Charges](#) | [Rates](#) | [Rate Times](#) | [Rate Vis](#) | [Seasons](#) | [Rate Calendar](#)

- If a rate structure was archived in error, or is no longer needed, you can delete the archive for that date range by right clicking on the archive and selecting Delete Period. The archive before the deleted archive is modified to cover the deleted archive's date range. For example, if you delete an archived rate with an End Date of February 2, 2016, the archived rate before that rate will now have an End Date of February 2, 2016. Note that you cannot delete the current rate structure.



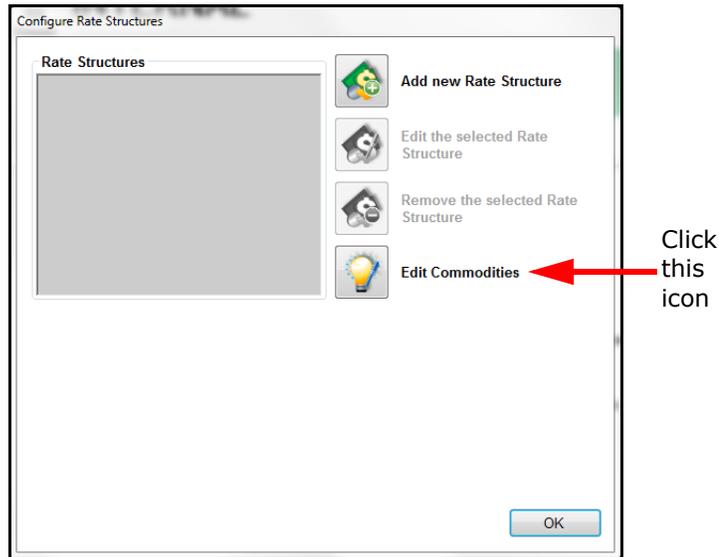
WARNING! Deleting the archived rate structure is permanent, and cannot be undone.

- The Archived rate's End date and the Current rate's Start Date are both defaulted to the current date. If you need a rate structure to take effect on a specific date, you can accomplish this by editing the End Date for the Archived rate structure listed before the Current rate structure. See the example screen below.

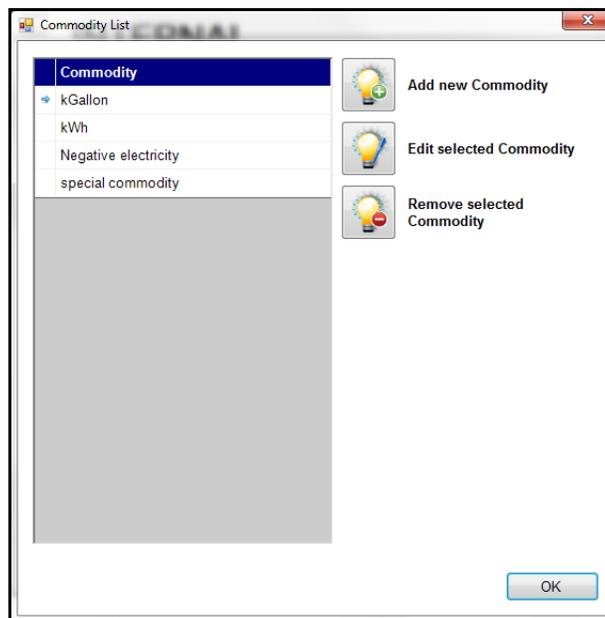


- Click in the End Date field of the Archived rate.
 - Click on the arrow to display a calendar.
 - The current date is shown at the bottom of the calendar - in this example, 4/11/2017. When you select a different date by clicking on it in the calendar- in this example, April 19, 2017, the End Date for the Archived rate and the Start Date for the Current rate both change to the new date.
 - When done, click Update to store the changes.
- To delete a rate structure, click on the rate structure and click the Remove the Selected Rate Structure icon. You will see a Confirmation window asking if you are sure you want to remove the rate structure - click Yes to remove; click No to keep the rate structure. Removing the rate structure also removes it from any locations using it.

- You can also add, edit, or delete commodities from the Rate Structures screen.
 - a. Click the Edit Commodities icon.



- b. You will see the screen shown below. The existing commodities are listed in the box on the left. To add a commodity, click the Add New Commodity icon; to edit a commodity, click on the commodity in the list and click the Edit Selected Commodity icon. In both cases you will see the same Edit Commodity screen that was explained earlier in this section (beginning on page 4-18).



- c. To delete the commodity, click on the commodity in the list and click the Remove Selected Commodity icon. You will see a confirmation window - click Yes to delete the commodity; click No to keep the commodity. Removing a commodity will remove all of the rate structures that use the commodity.
- To create a copy of a rate structure, click on the rate structure and click the Copy Rate icon. The Rate Structure screen opens, with all of the rate structure's information in it. You can change the rate structure name and anything else you wish, and then click Store to save the copy as a new rate structure.
 - To import a rate structure into the rate structures list, click on the rate structure and click the Import Rate icon. A screen opens letting you locate the rate structure XML file that you want to import. When you click Open, the rate structure opens in the rate structure screen. You can make any changes you wish, and then click Store to save the imported rate structure.
 - To export a rate structure, click on the rate structure and click the Export Rate icon. A screen opens, letting you save the rate structure file as an XML file.

4.3: Set Up a Customer

Next you set up customer information. The customer is the person who will be receiving the bill from the provider. The customer can have one location or multiple locations. The software will generate a bill for each location for this customer.

1. From the Settings Editor main screen, click the Add Customer icon. You will see the screen shown below, but there will be an Apply icon in place of the other icons.

Edit Customer Information

Customer ID: 1234

Customer Name: College Park Apartments

Address: 200 College Park Drive
Altoona, PA 16601

Telephone: 789-943-2789

Email Address: cpa@gmail.com

Report Email Settings: Bill Report Disabled/Default, Usage Report Disabled/Default

Buttons: Add Location to this Customer, Remove this Customer, Store, Exit

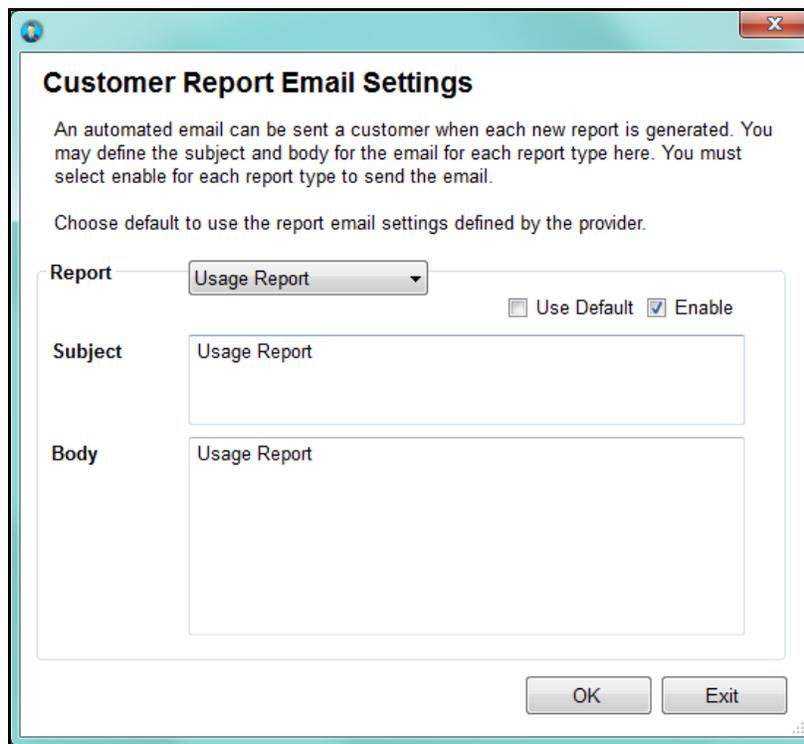
2. Enter the following:

- Customer ID: enter a unique identifier for the customer, which will be used to identify this customer.
- Customer Name: enter the customer's name (this does not have to be unique).
- Address: enter the customer's billing address.
- Telephone number
- Email Address
- Report Email Settings: after you click Apply you will be able to set up this field.

3. Click the Apply icon to save your changes. The message "Values Saved" displays in the bottom left of the screen, and two new icons appear on the screen - Add Location to This Customer and Remove This Customer (shown on the previous screen).

NOTE: If you want to delete the customer, click the Remove This Customer icon. You will see a confirmation window - click Yes to delete the customer; click No to keep the customer. Removing the customer will delete all locations and meters for the customer.

4. After clicking Apply, you will also see a Configure button next to Report Email settings. Click the button to display the Report Email Settings screen.



The screenshot shows a dialog box titled "Customer Report Email Settings". The text inside reads: "An automated email can be sent a customer when each new report is generated. You may define the subject and body for the email for each report type here. You must select enable for each report type to send the email." Below this, it says "Choose default to use the report email settings defined by the provider." There is a "Report" dropdown menu set to "Usage Report". To the right of the dropdown are two checkboxes: "Use Default" (unchecked) and "Enable" (checked). Below these are two text input fields: "Subject" and "Body", both containing the text "Usage Report". At the bottom right are "OK" and "Exit" buttons.

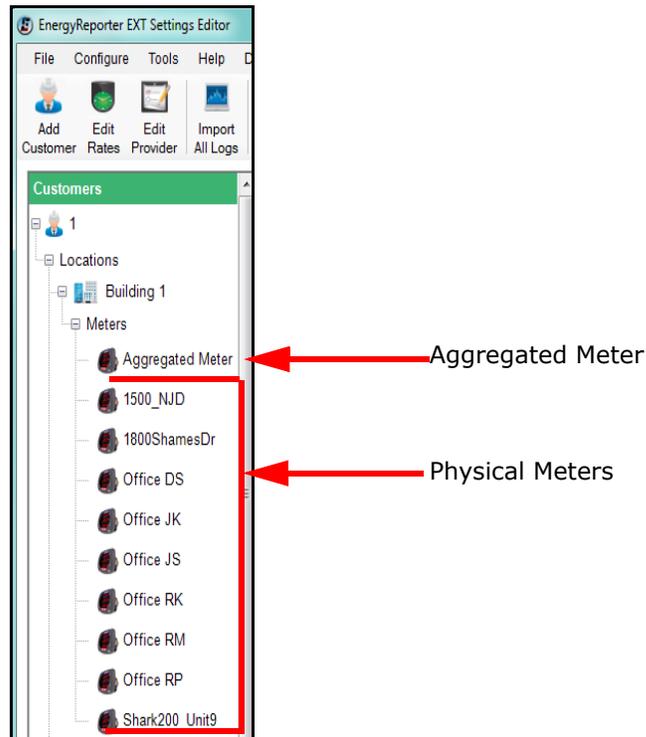
- When this screen first opens, the Use default box is checked and the Subject and Body fields aren't editable. Keep that setting as is, if you want to use the report email settings you already set up in the Default Report Email Settings screen (see page 4-6) for this customer.
- If you want to change the Subject and Body fields for this customer's usage report and/or bill report:
 - a. Click the Default button to disable the default setting.
 - b. Select Bill Report or Usage Report from the Report pull-down menu.

- c. Enter the Subject and Body text you want to use.
 - d. Click the Enable checkbox.
 - e. Repeat these steps if desired, for the other Report option.
 - f. Click OK to close the screen.
5. Click Add Location to This customer and continue to the next section.

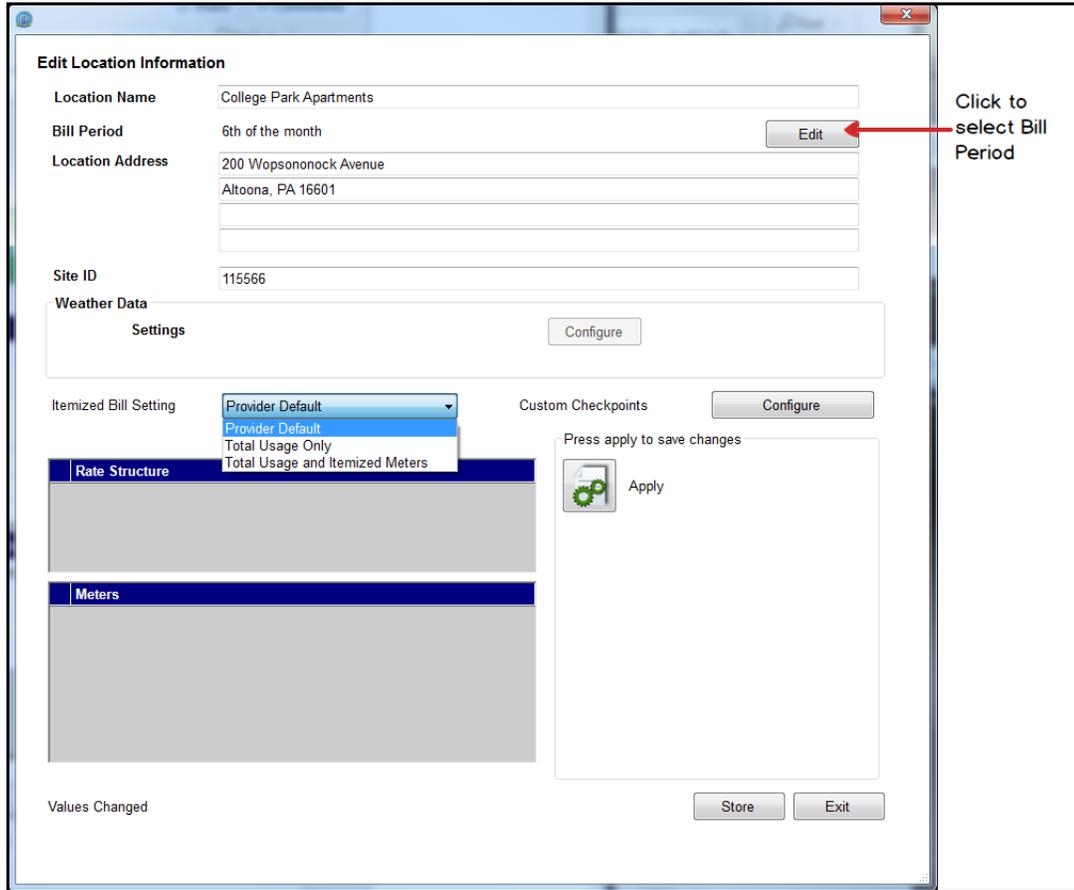
4.4: Set Up a Location and Add Meters to It

Once you have set up a customer, you enter the customer's billing locations. A location is the physical address - the actual location that is consuming the power or other commodity.

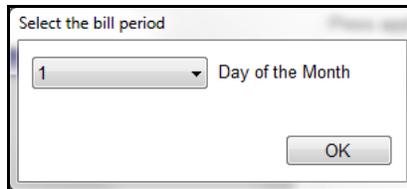
- Customers can have multiple locations. They can also have a rate structure for each commodity being billed for at a location, e.g., Energy and gas.
- Each location can have one or more meters attached to it. If there is more than one meter, the software creates a virtual, "aggregated" meter that stores the composite usage data of all the location's meters. Whenever a meter data import is performed, the Aggregated Meter is updated with new usage data for all the meters at that location. The Aggregated Meter is displayed on the main screen of the Bill Settings Editor, in the Location tree.



1. When you click the Add Location to This Customer icon, you see the screen shown below. Use this screen to set up information for the billing location.



2. Enter a unique name for the location in the Location Name field.
3. Click Edit next to Bill Period to select a billing period. The billing period is the day of the month on which the bill is computed.



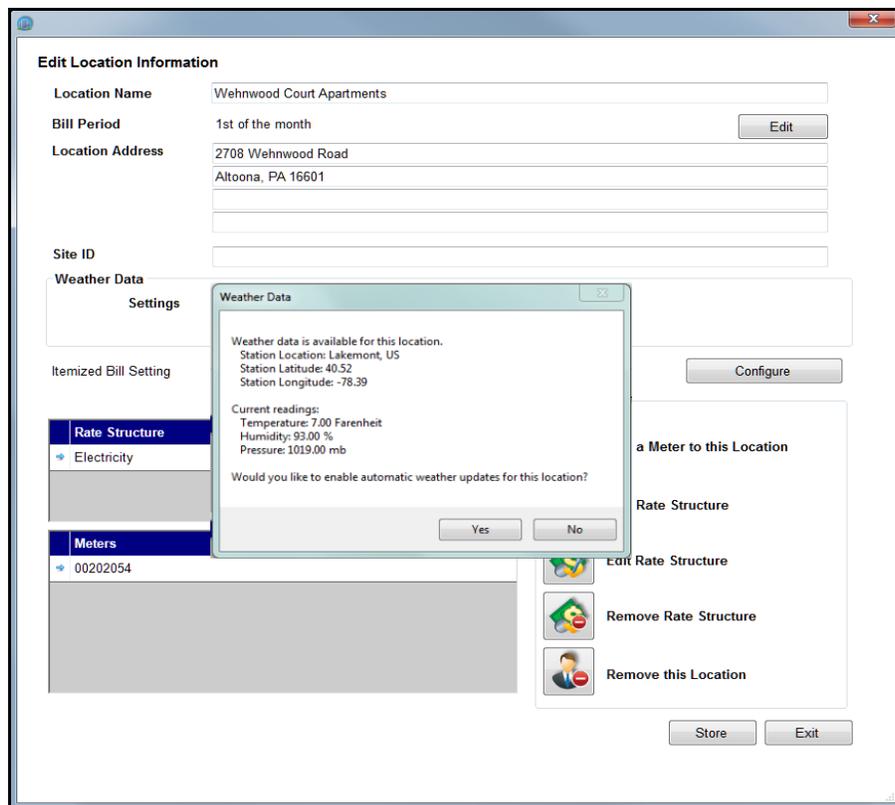
4. From the pull-down menu, select the day of the month you want the billing period to begin and then click OK. The Bill Period screen closes and the day you chose is displayed in the Edit Location Information screen.
5. Add the Location address. If you are generating invoices rather than bills, you can enter a reference number for Site ID, which will be printed on the invoice.

6. Click Apply to create the location.

A window opens with weather data information based on the address you entered for the location, and asking if you want to enable automatic weather data updates. The EnergyReporterPQA™ application can get weather data for your locations; that you can then use to compare commodity usage against temperature, humidity, and barometric pressure.

Weather data is collected from an online weather data service provider. The service uses the latitude and longitude of your location to find the closest weather station. The latitude and longitude for this location's address is displayed in the window.

Verify that the discovered weather location is correct, and then click Yes to enable automatic weather data updates; click No if you don't want to automatically update, or if you want to configure weather data collection manually (instructions on page 4-52).



NOTES:

- The default for weather display is Fahrenheit. You can change it to Celsius through the Options screen's Configuration tab. See Section 7.4.2 for instructions.
- You can disable the automatic configuration of weather data through the Option screen's Configuration tab - see 7.2.2: Configuration Setting, on page 7-4.
- Weather data consists of temperature, humidity and barometric pressure. Usually, the weather station updates this information not more than once an hour; but it may choose to limit the number of requests that can be fulfilled per hour.
- The Weather Data section contains a Configure button which you can use to manually configure weather information. If you want to manually enter or edit weather data collection settings for a location:
 - a. Click the Configure button in the Weather Data section of the screen.

Location Weather Data Settings

Enable weather data collection

Customer Location

Latitude 39.81928 Test

Longitude -75.41853

Latitude and Longitude Search

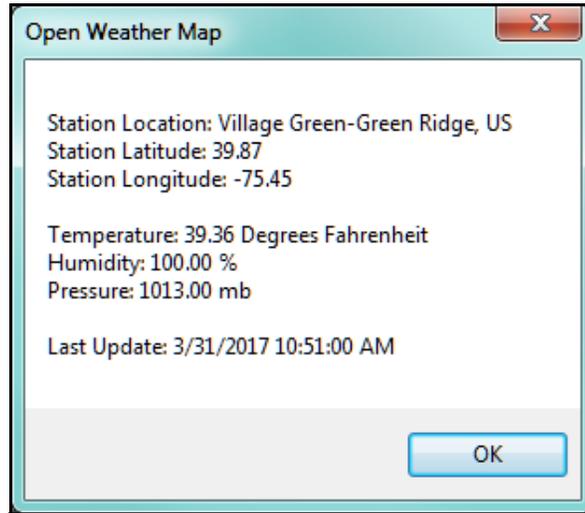
Address Search

To search, enter the name of the Town, State and Zip code. Do not enter a street address.

OK Exit

- b. The Enable Weather Data Collection checkbox is checked, and the Latitude and Longitude of the location you entered is displayed.
 - To disable collection of weather data, uncheck the Enable box.
 - To search for a different location's information, enter the City, State, and Zip Code in the Address field and click Search.

- To see weather and weather station information, click Test. You will see a screen similar to the one shown below.



NOTE: If you chose not to enable weather data collection earlier (see step 6), the Enable button will not be checked and the locations' city, state, and zip code will be in the Search field. Click the Enable button and then click Search to find the address's longitude and latitude.

- c. Click OK to close the screen.

7. Note that the screen has changed to offer more options.

The new options let you:

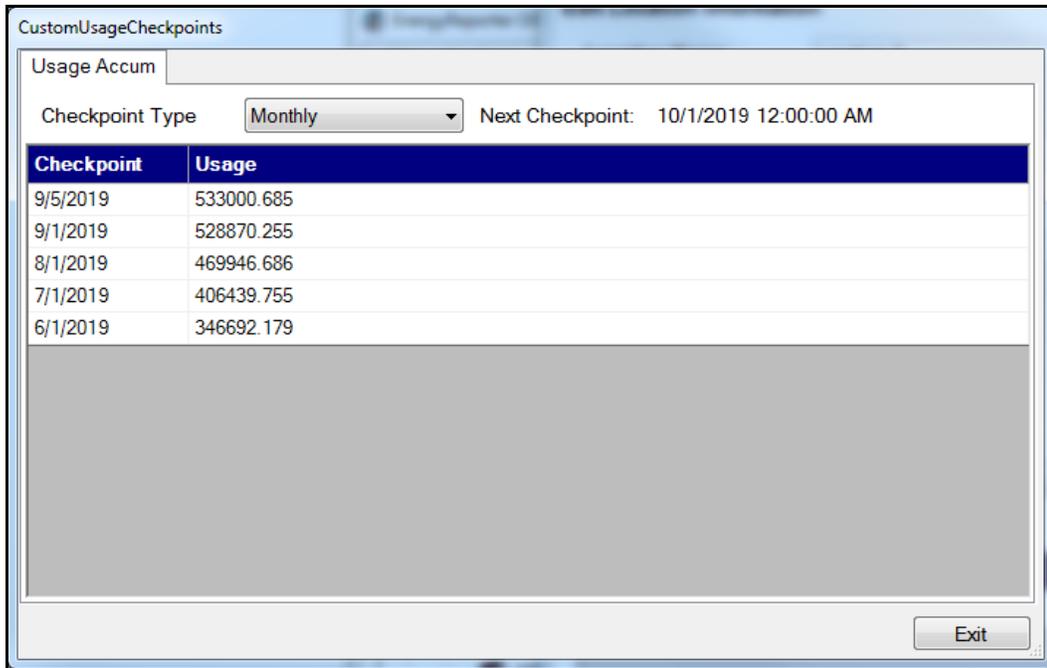
- Add a meter to this location
- Add a rate structure to this location
- Edit a rate structure for this location
- Remove a rate structure from this location
- Remove this location

In addition, there are two boxes on the screen - one for Rate Structures assigned to this location, and one for meters assigned to this location. When you are adding a new location, these boxes will be empty, but if you are editing an existing location, there will be entries in the boxes.

8. You have the option of overriding the Provider’s itemized bill settings (see 4.1: Set Up a Provider, on page 4-4) for bills generated for this location. Use the pull-down menu next to Itemized Bill Setting to select:

- Provider Default: use the settings made for the Provider.
- Total Usage Only: do not display itemized usage for this location’s bills, but only total usage.
- Total Usage and Itemized Meters: display both the total usage for the location and details of the individual meters’ usage.

9. Daily usage accumulations are calculated based on aggregated interval values, and stored in the location’s Aggregated Meter (see 4.4: Set Up a Location and Add Meters to It, on page 4-57). Checkpoints are used to maintain previous accumulation values. Currently, monthly checkpoints are the default. To view existing checkpoint data for this location, click Configure next to Custom Checkpoints.



- As meters are added to a location, the new meter's values will be added to the accumulated value after the next checkpoint.
- The first row of the screen displays the latest live date and the live value. The live value is updated daily.

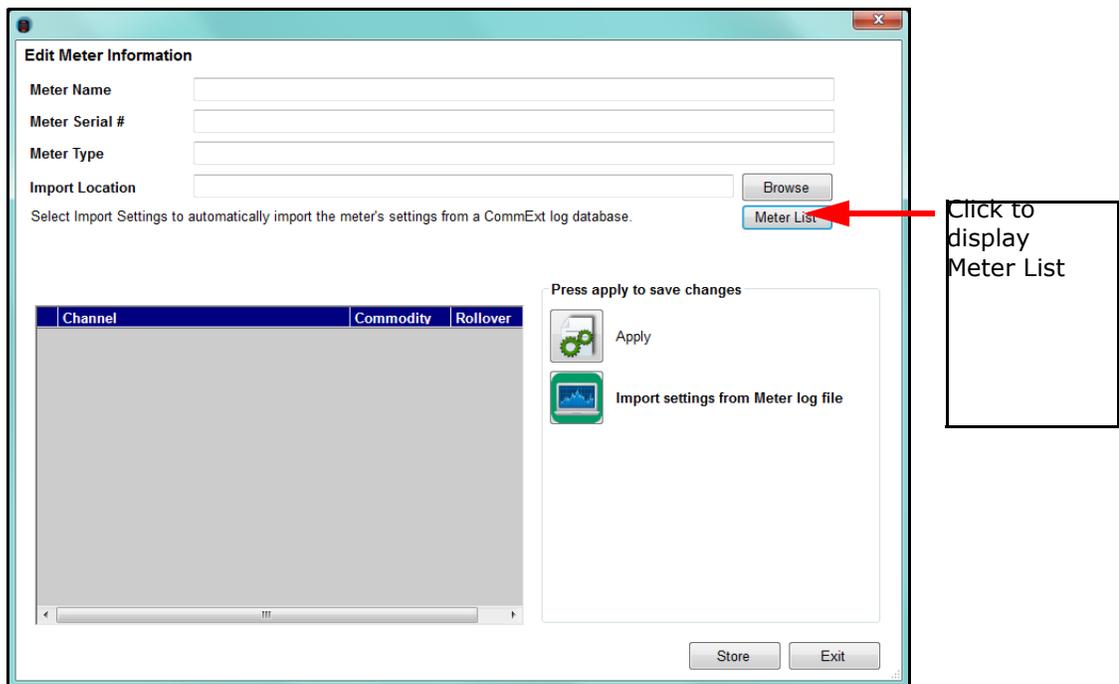
- On the first of the month a new checkpoint will be saved.
- Past checkpoints are displayed underneath the live checkpoint.
- You can delete checkpoints by right-clicking on a checkpoint line and selecting Delete. Note that this will also delete all of the checkpoints more recent than the one you select, except for the current month's checkpoint.
 - You will see two confirmation message windows. The first asks you to confirm the deletion (click Yes) and in the second you will need to type "DELETE" and then click OK. This is to protect you against clicking Yes by mistake, since checkpoint deletion cannot be undone!



IMPORTANT! Once deleted, a checkpoint cannot be recreated.

Add a Meter

10. Click the Add a Meter to this Location icon.



11. Click the Meter List button to display the meters that have been added through the MeterManagerPQA™ application (see Chapter 2: Step 2 - Use the MeterMana-

Select the meter to add

Meter Name	Meter Type	Online Status
MP200		
MP200_1	MP200	Online
MP200_1	MP200	Offline
MP200_2	MP200	Online
MP200_2	MP200	Offline
MP200_3	MP200	Online
MP200_3	MP200	Offline
MP200_4	MP200	Offline
MP200_4	MP200	Online
MP200_5	MP200	Offline
MP200_5	MP200	Online
MP200_6	MP200	Online
MP200_6	MP200	Offline
Nexus 1250		
00005821	Nexus 1250	Online
1252F_Poller	Nexus 1250	Online
1272_Enhanced	Nexus 1250	Online
Andrews 1250	Nexus 1250	Online

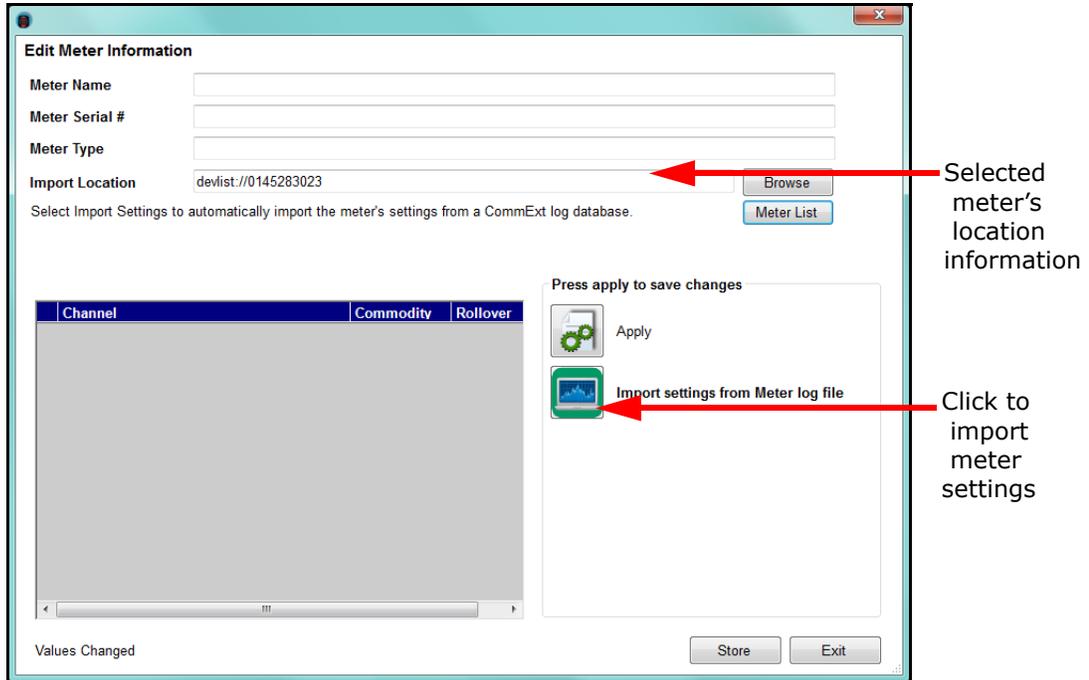
Log Location location...

gerPQA™ Application to the Automate the EnergyReporterPQA™ Application, on page 2-1).

The Meter List lets you quickly and easily add meters and all of their associated data into the EnergyReporterPQA™ application.

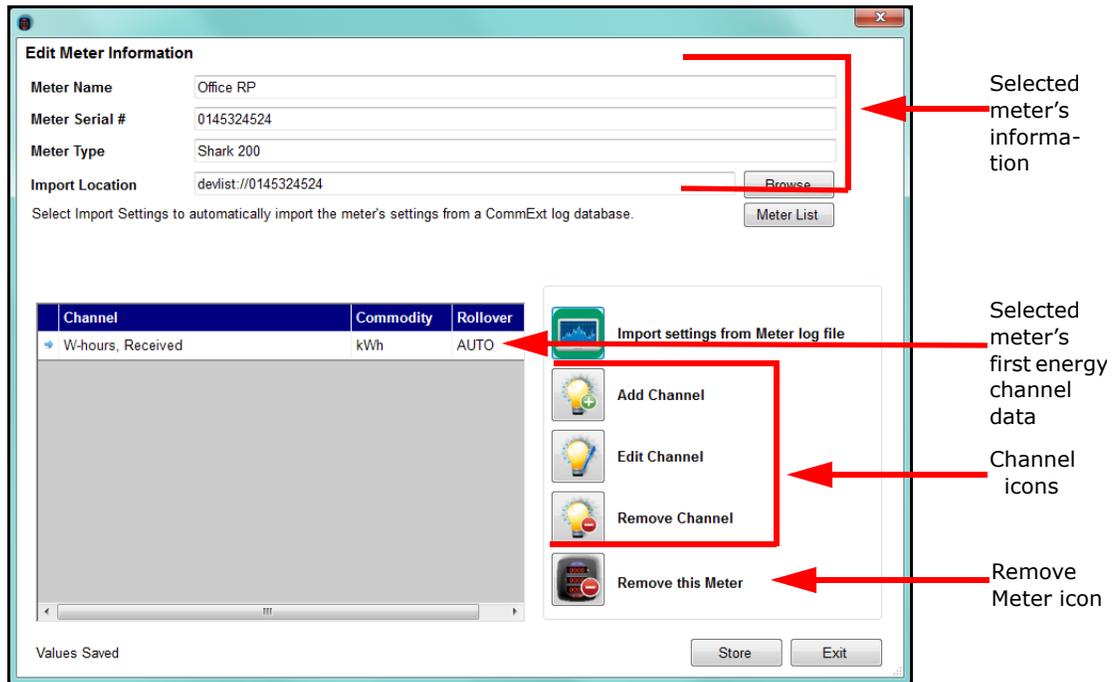
NOTE: You can add a meter manually if you need to, though the preferred method is through the meter list, as described here. For instructions on manually adding a meter, see 4.4.1: Adding a Meter Manually, on page 4-71.

12. The meters are listed in their assigned groups. Click on a meter and click the Select button to add it. The Edit Meter Information screen is re-displayed, with the selected meter's Import Location.



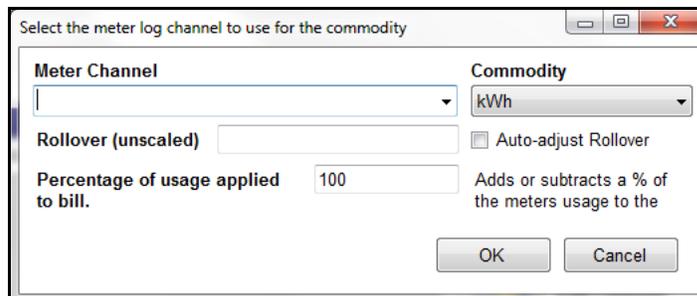
13. Click the Import Settings from Meter Log File icon.

- Click the Apply icon. The screen will re-display showing the selected meter's information and additional icons.



- After the meter settings are imported from the meter's log file and you click Apply, the first energy channel is selected and displayed in the Channel fields. A channel is a single type of data item from the meter's log database, e.g., Watt-hours Received. The channel will be linked to a commodity for use in generating bills; e.g., the Watt-hours Received channel linked to the kWh commodity. The Channel icons let you add channels, edit them, or remove them.

To add a channel, Click Add Channel.



- Select the channel from the pull-down menu. The channels you see are the data values that you set up for this log using the CommunicatorPQA™ 5 application.

They are channels for Energy and/or pulse accumulations. See 4.4.3: Importing External Data, on page 4-76, for channel setting instructions for external databases, such as an HMIPQA™ application database.

17. Select the commodity from the pull-down menu. Once the data has been imported, it will be tracked by the commodity.

- You can select only one channel per commodity, per meter, e.g., Total Watt-hours for kWh.
- A meter can have multiple commodities. See the diagram below.

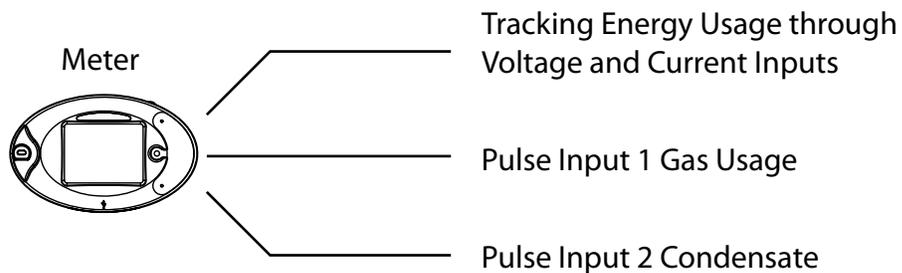


Figure 4.3: Example of Meter Measuring Multiple Commodities

18. Auto-adjust Rollover is the default selection on the screen. The unscaled rollover field will display the settings from the CommunicatorPQA™ software for this channel, if you click on the Auto-adjust Rollover box to de-select it. You can edit the value in the unscaled rollover field.

NOTE: Manually setting the rollover field is only applicable to older Nexus® 1250 models or HMIPQA™ application values.

19. The Percentage of Usage Applied to Bill field lets you add or subtract a portion of the usage for this channel, for this meter, to the bill when it is generated, allowing for credits for certain meters. You might want to use this if you want to remove a meter from being billed for this usage. For example, if you have a main meter at a location, e.g., a meter attached to the building’s utility feeder, and submeters in individual tenant units, you may want to bill for main meter usage, comprised of things like hallway and outside lighting, on a separate bill from the tenant billing. To do this you would put 100% for the usage field for the submeters and -100% for the usage field for the meter attached to the utility feeder.

20. When you have made your choices, click OK. The channel, commodity, and roll-over value are now shown in the Channel/Commodity/Rollover box in the Edit Meter Information screen.

NOTES:

- To edit a channel, click on it in the box and click the Edit Channel icon; to remove a Channel, click on it in the box and click the Remove Channel icon.
- When changing the meter channel used for the commodity, if the new channel's type changes from accumulator (e.g., Quadrant 1+4 Wh) to interval accumulator (e.g, Interval Energy Quadrant 1+4 Wh), or vice versa, the EnergyReporterPQA™ application will automatically try to convert the data that has already been imported, in order to preserve it. This can help ensure continuity of data when you change the meter's log configuration.
 - When converting from Accumulator to Interval Accumulator, the interpolated interval values will be used as a basis for the new Interval Accumulator values to be imported.
 - When converting from Interval Accumulator to Accumulator, the interval values will be used as a basis for the new interpolated intervals. This allows interval data to be retrieved from before the available accumulator values.

21. If you want to add a channel for another commodity, follow the same procedure. When you are done selecting channels, click Store to save the settings.

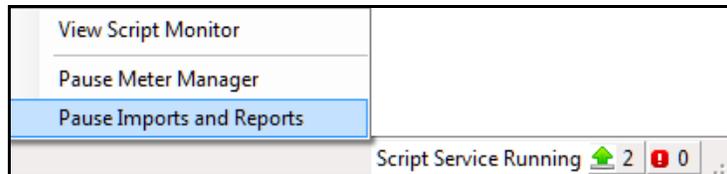
NOTE: When selecting a database or meter to import data from, if the database contains logged Demand values, the EnergyReporterPQA™ application will automatically select the best Demand channel to be imported. If you wish to change which Demand value is used, select the Demand channel, click Edit Channel, and select a different channel. If you do not want to import the meter's demand channel, or wish to use the software computed demand, just remove the Demand channel.

- If you have a meter that has already been configured, and wish to add a demand channel, just select Add Channel, and select the Demand channel you wish to use.

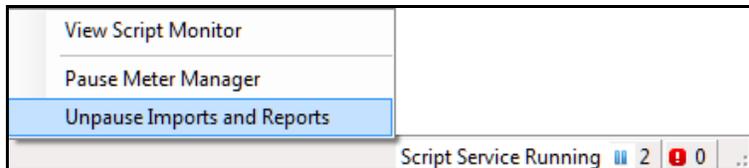
- Once configured, the imported meter demand will be used for all Demand charges in the Bills.

NOTE: While editing the meters at a location, EIG recommends that you pause automatic imports and report generation. When you are done editing the location, you can restart the imports and reports - the actions taken while paused will then be processed.

- To pause automatic imports and report generation, click on the Script Service Running Message at the bottom right of the Location screen and select Pause Imports and Reports.



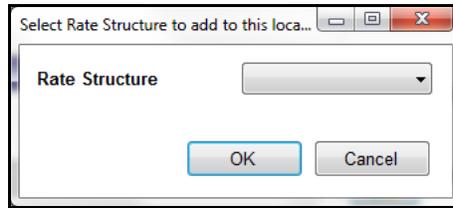
- To restart automatic imports and report generation, click on the Script Service Running Message and select Unpause Imports and Reports.



NOTE: If you forget to unpause the imports and reports, the MeterManagerPQA™ service will automatically unpause them for you after an hour of inactivity.

NOTE: This screen also gives you the option of removing the meter; to do so, click the Remove This Meter icon. **Removing the meter will delete all of the imported data for the meter.**

20. Click Exit to return to the Edit Location Information screen. Add a rate structure to the Location by clicking the Add Rate Structure icon. You will see the screen shown below.



21. Select the rate structure you want from the pull-down menu and click OK to close the screen.

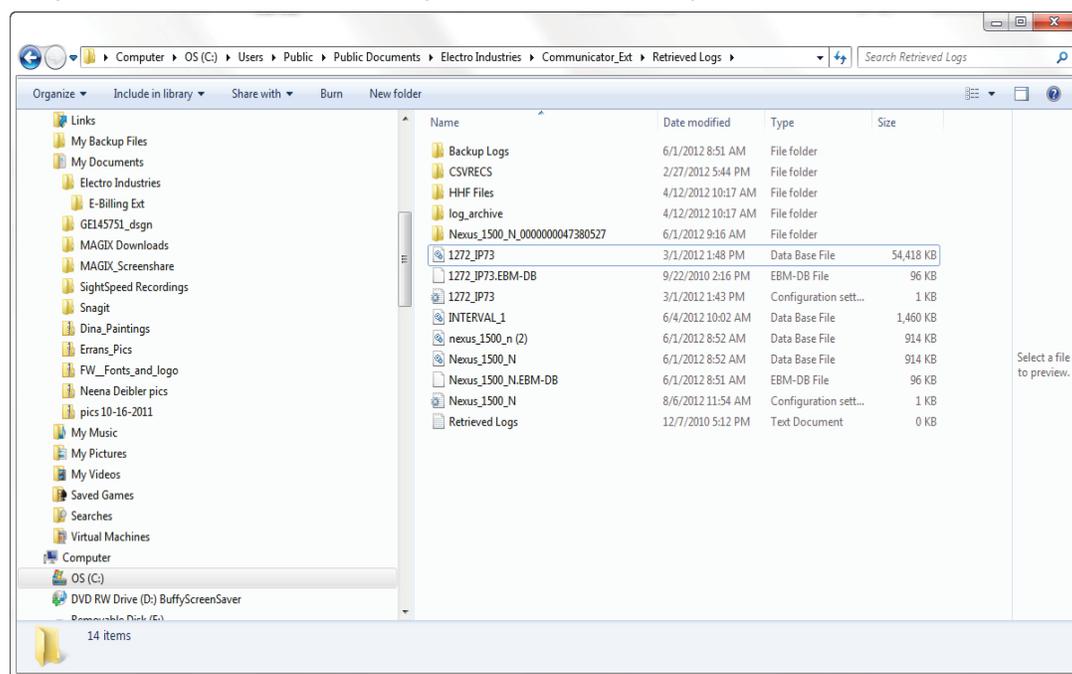
NOTE: You can also select Create New to add a new rate structure. Follow the instructions for adding a rate structure in 4.2: Set Up Rate Structures, on page 4-19.

4.4.1: Adding a Meter Manually

The usual and preferred method of adding meters to a location is through the meter list, as shown in the previous section. If you need to enter a meter manually, follow these instructions:

1. From the Edit Location Information screen, click the Add a Meter to This Location icon. The Edit Information screen opens. Enter the following:
 - Meter Name: enter a unique identifier for the meter. This name must be unique across all locations. It is used to identify the meter's billing data.
 - Meter Serial #: enter the meter's serial number.
 - Meter Type: enter the meter type (Nexus® or Shark®).

2. Import Location is the place where the meter's billing log data is stored (e.g., C:\Users\Public\Documents\Electro Industries\Communicator_EXT\Retrieved Logs). This log data file contains the raw values the EnergyReporterPQA™ application imports in order to generate its billing database, i.e., Energy usage or pulse accumulations. Refer to Figure 4.1 for a depiction of the data flow between applications; see Chapter 2 if you need to refresh your understanding of setting up the meters' historical logs for EnergyReporterPQA™ application use. Click Browse to locate the meter's log database file. You will see a screen that lets you locate and select the log file. See the example screen shown below.



NOTES:

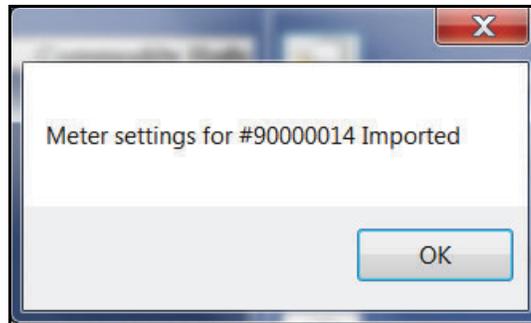
- The log database file comes from either the CommunicatorPQA™ application (*.db or *.dml: the database created when logs are retrieved using the CommunicatorPQA™ application) or the HMIPQA™ application (*.dbf: the billing data database created by the HMIPQA™ software; see that software's documentation for details).
- See Section 6.1 for file importing suggestions.



WARNINGS!

- Be careful when selecting the location to import from. Importing is done by the Settings Editor software, and if you select a location that is not accessible (or invalid), you may not be able to import the data.

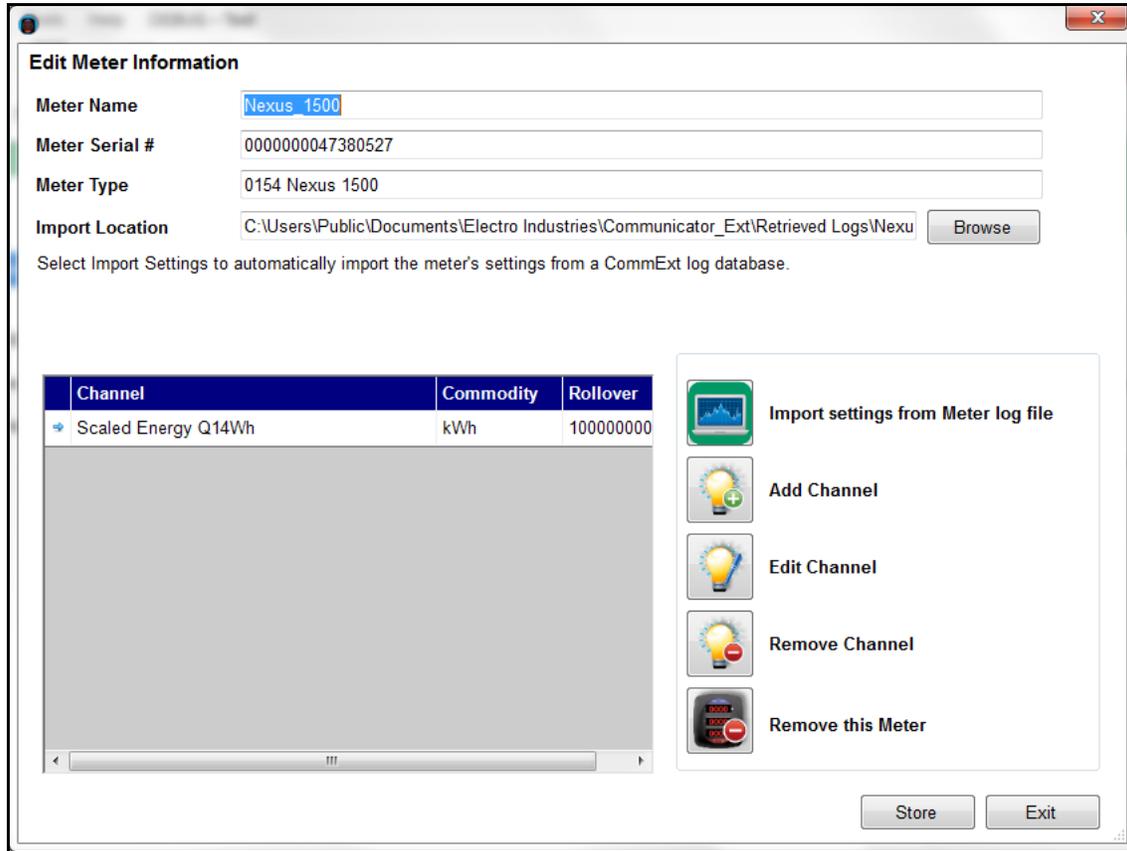
- If you change the import location file, it will wipe out the selected channels. You will have to select the channels you want to import, again.
3. When you find the file you want to use, click Open. The screen closes and you see the Edit Meter Information screen. The log file's path is now displayed on the screen next to Import Location.
 4. Once you've selected the file to import from, the application will verify that it contains log items that can be linked to commodities. This includes Energy, e.g., Total Watt-hours, and pulse accumulations, e.g., a Digital Input channel.
 5. If you are using a CommunicatorPQA™ application log database, click the Import Settings from Meter Log File icon (this function is not applicable to HMIPQA™ application databases). You will see the message window shown below. It tells you that the meter settings were imported from the meter with the serial number listed in the screen. Click OK to close the window.



NOTE: The Import Settings function will only fill in a meter name that has not already been entered. If you have already filled in the meter name, it will leave that as is.

TIP: EIG highly recommends importing all the meter configuration data. This automated tool makes the meter configuration task much simpler.

6. Click the Apply icon to create the meter. The Edit Meter information screen re-displays with additional options - now you can choose the channels to import. See the example screen shown below.



7. Continue from step 13 in Section 4.4.

4.4.2: Meter at Location Example

If you have two meters at a location, for example, each metering a utility feeder, you would set up both meters for the location, following the instructions in this section. The software will import all of the usage data for both meters and when the bill is generated the usage for both meters will be totalized to arrive at the billed dollar amount. See the diagram on the next page.

NOTE: Meter imports are a background process managed by the server, and are automatically performed when settings change or when new log data is downloaded from the meter - you do not need to manually import any data. The current status of the currently running imports can be viewed from the View Imports screen - see 7.1: The Service Status Bar, on page 7-1.

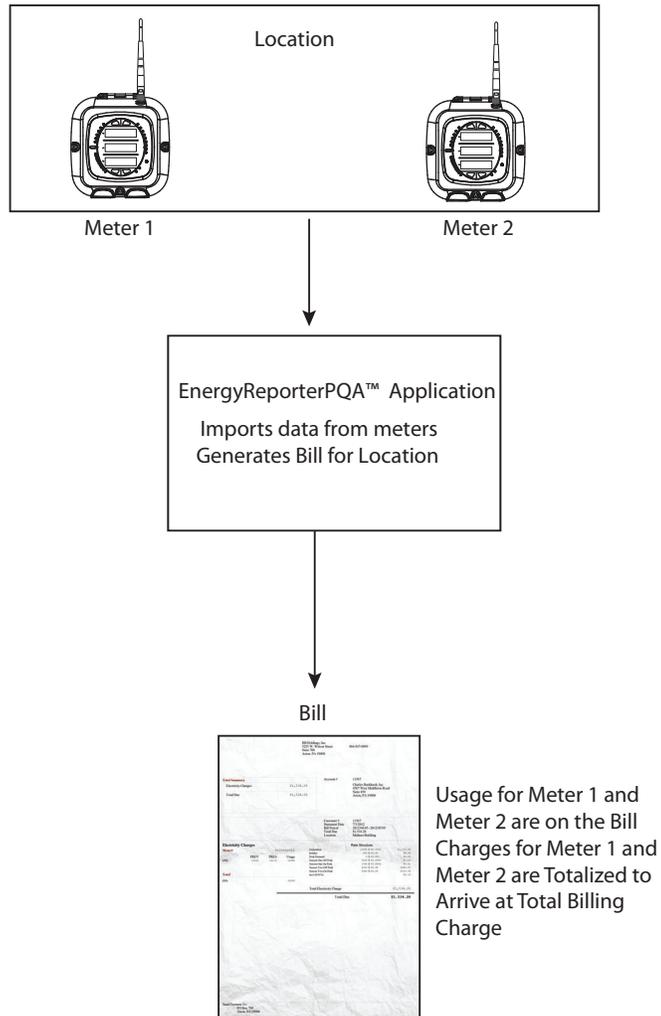


Figure 4.4: Totalizing Meters

4.4.3: Importing External Data

If you are setting up the EnergyReporterPQA™ application for use with external data (as opposed to the CommunicatorPQA™ application log data), such as an HMIPQA™ application database file, there are some unique considerations. Below is an example of an HMIPQA™ application database file formatted for use with the EnergyReporterPQA™ application.

	A	B	C	D
1	DATE	TIME	KWHR	CONDENSATE
2	1/1/2015	0:00 AM	433.6	25538607
3	1/1/2015	0:15 AM	438.0	25538607
4	1/1/2015	0:30 AM	442.5	25538606
5	1/1/2015	0:45 AM	446.9	25538606
6	1/1/2015	1:00 AM	451.4	25538605
7	1/1/2015	1:15 AM	455.8	25538605

- The database file must have four fields:
 - DATE: the date of the record formatted as yyyy/mm/dd
 - TIME: the time of day of the record formatted as hh:mm:ss
 - KWHR: the Energy usage in kilo-watt-hours
 - CONDENSATE: this field is a pulse accumulator channel, intended for condensate (steam) pulses. You can assign this channel to other commodities, such as gas or water, in the EnergyReporterPQA™ application - see Section 4.4 for instructions. This field is assumed to be in kilo scale.

These are the only fields you can use. If you need to use more fields, split the data into multiple files and import as multiple meters.

- The optimal interval for the data is 15 minutes, time-stamped on the minute.
- The database file must be a dBase IV format database. It can be opened in Excel, but should not be saved in Excel as this can cause database corruption which will prevent the file from working with the EnergyReporterPQA™ application.
- The file name should be eight characters with an extension of three characters, e.g., Nx1500_2.dbf.

NOTES:

- HMIPQA™ application databases separate the original meter from the data, so there is no way for the application to determine the rollover value. Consult the HMIPQA™ application configuration and documentation to determine the correct value to enter. Your system integrator will have to provide you with the Energy or other commodity rollover value.
- If no rollover is programmed in the HMIPQA™ application, the EnergyReporter-PQA™ application rollover value should be the same as the rollover value in the meter’s device profile, set in the CommunicatorPQA™ application (in the meter’s Device Profile>Revenue and Energy Settings>Energy Scaling).

The screenshot shows the 'Energy Scale Settings' dialog box with the 'Watt Hour' tab selected. The table below is a representation of the data shown in the dialog:

Item	Digits	Decimal Places	Units	Example
Quadrant 1 Wh	8	1	kWh	9999999.9
Quadrant 2 Wh	8	1	kWh	9999999.9
Quadrant 3 Wh	8	1	kWh	9999999.9
Quadrant 4 Wh	8	1	kWh	9999999.9
Quadrant 1+4 Wh	8	1	kWh	9999999.9
Quadrant 2+3 Wh	8	1	kWh	9999999.9

Net Wh uses Quadrant 1+4 Wh settings.

Rollover Value

Above is an example from a Nexus® Series meter.

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5: Step 5 - Dashboard Viewer

The EnergyReporterPQA™ application has two main components. The first is a settings editor/server that provides all of the calculations and stores the data in the usage database. The second is a viewer application. The viewer component allows the user to view and analyze the stored data. Both components can be installed on one machine.

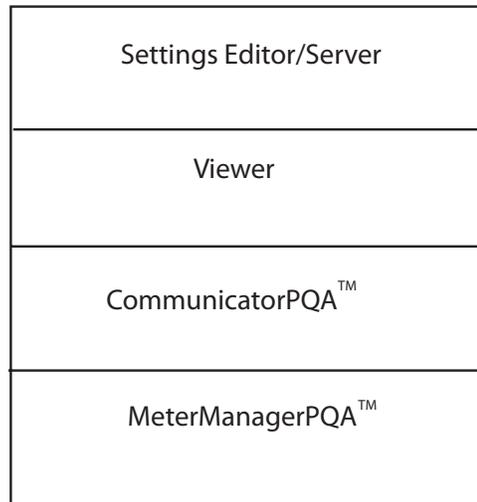


Figure 5.1: Settings Editor/Server and Viewer Installed on One PC

You used the Settings Editor/Server to set up customers, locations for customers, and meters at locations, as well as commodities and rate structures that will be applied to usage. The MeterManagerPQA™ application automatically downloads the logs from the selected meters and the EnergyReporterPQA™ application automatically imports the commodity usage data from the logs. The EnergyReporterPQA™ application generates the bills and usage reports based on the billing period and report criteria you have set up using the Settings Editor.

The Dashboard Viewer is the part of the EnergyReporterPQA™ application that lets you see, print, and export billing and usage information for the customers, locations, and meters.

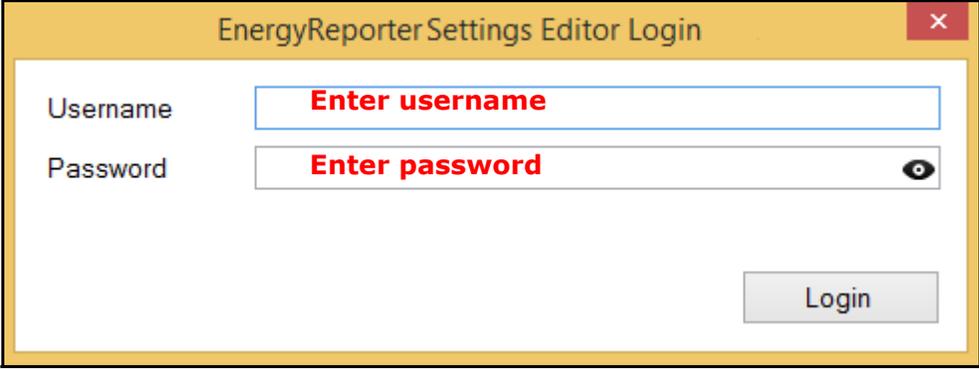
As mentioned in Chapter 4, locations with multiple meters generate a virtual meter to store aggregated meter data. The Aggregate Meter's data can also be accessed from the Dashboard Viewer.

5.1: Accessing the Dashboard Viewer

1. Click either the Dashboard Viewer icon from the top of the Settings Editor screen, or the Dashboard Viewer icon from the Settings Editor main screen. Dashboard Viewer is the part of the EnergyReporterPQA™ application that lets you see, print, and export billing and usage information for the customers, locations, and meters.

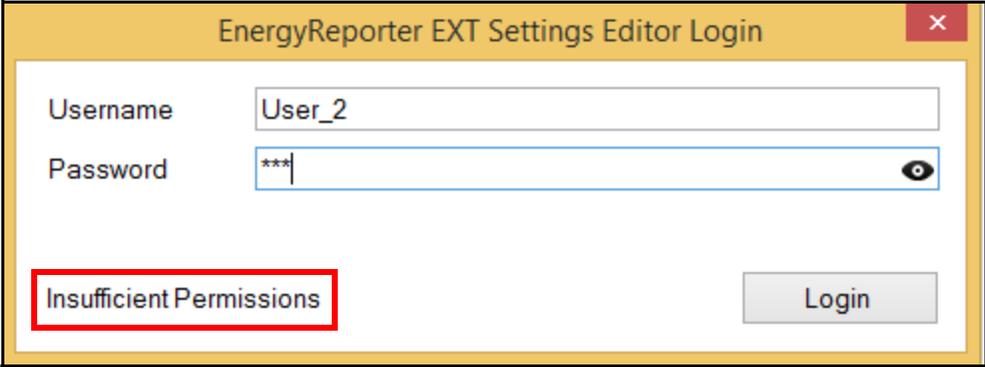
If you have enabled security in the MeterManagerPQA™ application, you will be required to enter a username and password. Only users with read and write will be able to manually generate bill and reports. Dashboard Viewer security is independent of Settings Editor security - you can log in using a different user/password combination.

Note that if security is not enabled, you will not see this login screen.

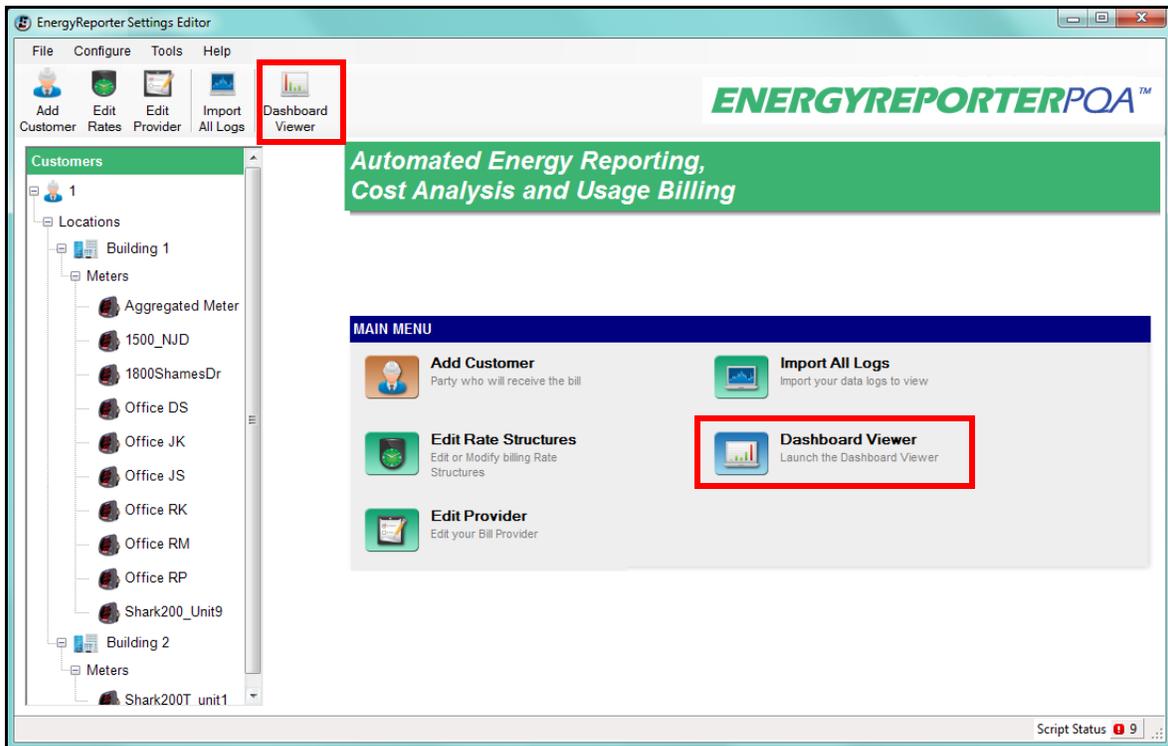


The screenshot shows a dialog box titled "EnergyReporterSettings Editor Login". It contains two input fields: "Username" with the placeholder text "Enter username" and "Password" with the placeholder text "Enter password" and a toggle icon. A "Login" button is located at the bottom right.

If you don't have the correct permission level to access the Settings Editor, there will be a message to that effect.



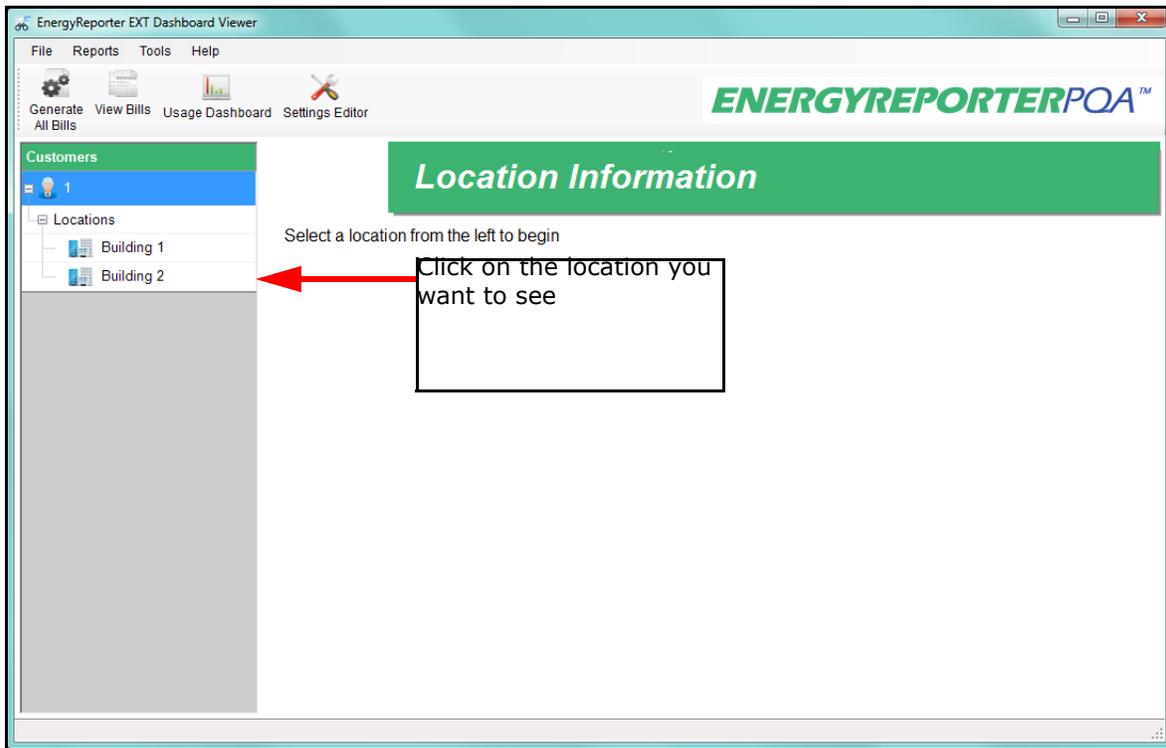
The screenshot shows a dialog box titled "EnergyReporter EXT Settings Editor Login". The "Username" field contains "User_2" and the "Password" field contains "***". A red-bordered box highlights the message "Insufficient Permissions" at the bottom left. A "Login" button is located at the bottom right.



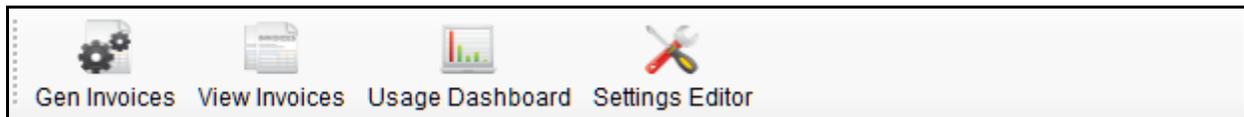
NOTE: You can click Tools>Refresh to return to the main screen display from another screen, e.g., the Location screen.

2. The Dashboard Viewer application starts and you see the main Dashboard Viewer screen. Choose a location from the tree on the left side of the screen. The location

is the physical place where the meters are located.



Note that if the Provider is configured for Invoices rather than bills, the Icon bar will look as shown below.



3. After you click on a location, information about the location is shown in the middle of the screen.

The screenshot shows the EnergyReporter EXT Dashboard Viewer interface. The main content area displays 'Location Information' for Building 1, including details like Customer ID, Location Name, Address, Next Bill Date, Rates, Meters, and Bill Data Range. Below this is a 'Previous Month Views' section with dropdown menus for 'Bill' and 'Usage Report', both set to 10/1/2015. A red arrow points to the 'Bill' dropdown, and another red arrow points to the 'Bill Generated: 10/9/2015' status. A callout box says 'Click to select another month/date'. The right sidebar contains options for 'Monthly Utility Bill', 'Executive Summary', and 'Usage Dashboard'. A 'Bill and Report Status' box is also present in the sidebar.

4. You can select a different month/date to see the Bill/Invoice and Usage Report status for that month.

The icons on the right of the screen let you:

- Monthly Utility Bill/Invoice - view the bill/invoice for the month. If it hasn't been generated yet, it will be generated and then displayed. See Section 5.4.
- Executive Summary - generate the Executive Summary Usage report based on your selections. See Section 5.3.1.
- Usage Dashboard - display the Usage Dashboard - see Section 5.2.

The icons at the top of the screen let you:

- Generate All Bills/Gen Invoices - generate customer bills/Invloces. See 5.4: Generating and Viewing Customer Bills, on page 5-23.

- View Bills/View Invoices - see already generated bills. See 5.4: Generating and Viewing Customer Bills, on page 5-23.
- Usage Dashboard- display the Usage Dashboard - see 5.2: Usage Dashboard, on page 5-7.
- Settings Editor - open the Settings Editor application. See Chapter 4.

The menu items at the top of the screen let you:

- File - select to connect to the database or exit the Dashboard Viewer.
- Reports - view or generate bills/invoices and usage reports, per selected criteria.
See:
5.3: Generating and Viewing Usage Reports, on page 5-14, and
5.3.3: Generate Custom Reports, on page 5-20.
- Tools - view bill data, view bill errors for locations, export meter data, perform advanced tasks (see chapters 6 and 7).
- Help - check for updates, see User Manual, see information about the application version, read the User License.

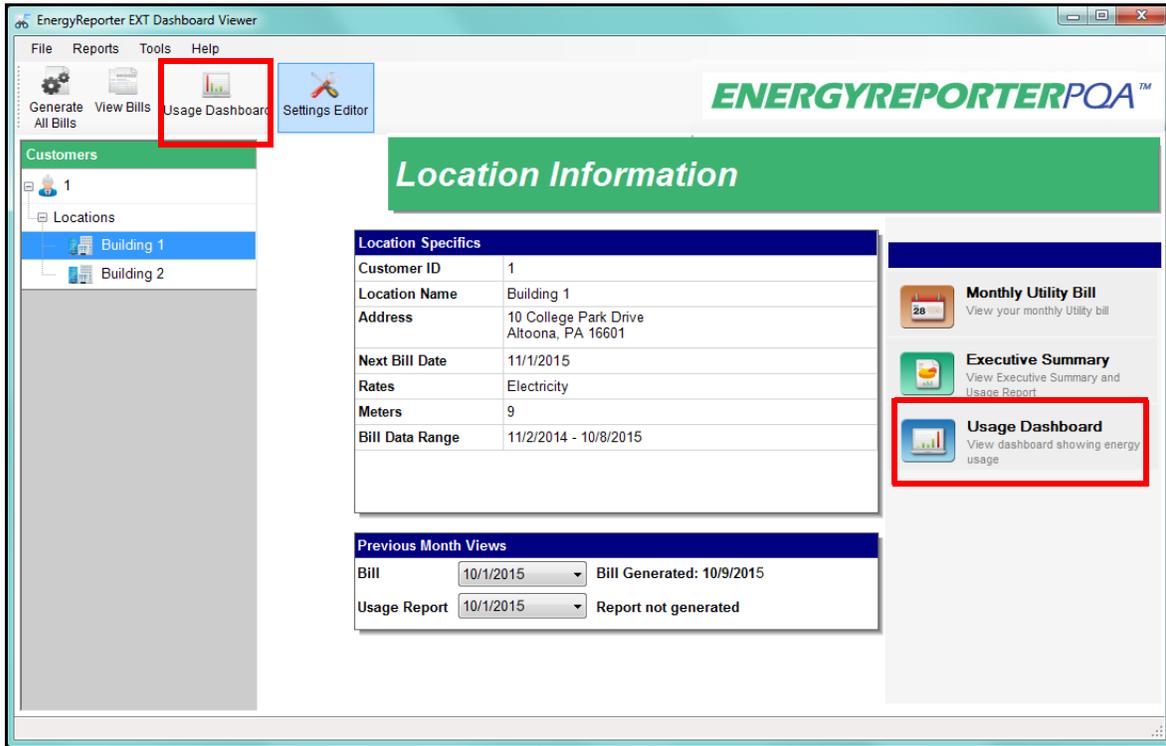
5.2: Usage Dashboard

One of the important features of the EnergyReporterPQA™ application is the Usage Dashboard. It allows you to easily view Energy and other commodity usage data in a number of formats:

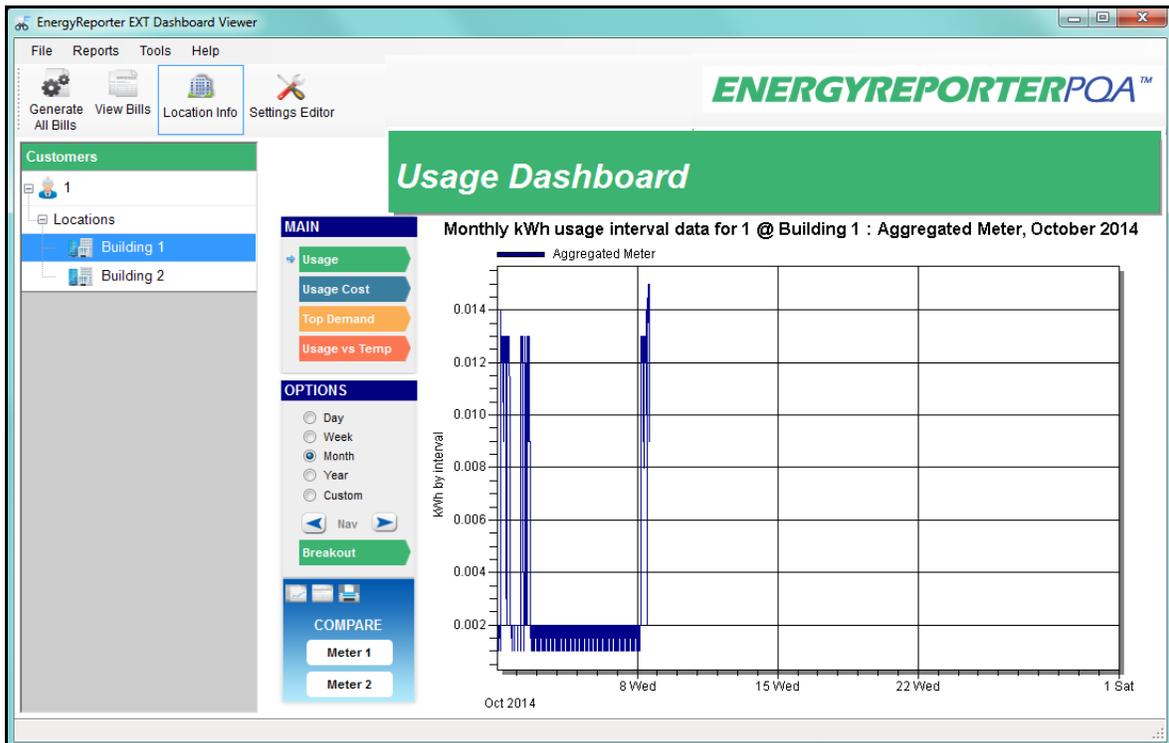
- View usage by day, week, month, year, or by a customized date range
- Compare usage between meters/locations
- Compare usage against weather data
- View costs
- View top Demand by day, week, month, year, or by a customized date range
- View meter logs (for meters set up using the MeterManagerPQA™ application's Meter List)
- Connect to the meter through CommunicatorPQA™ software (for meters set up using the MeterManagerPQA™ application's Meter List)
- Copy, export, or print graph image

The Usage Dashboard provides a configurable, top-level view of usage, to enable a precise understanding of energy consumption patterns. These patterns include trends, and demand on the power system.

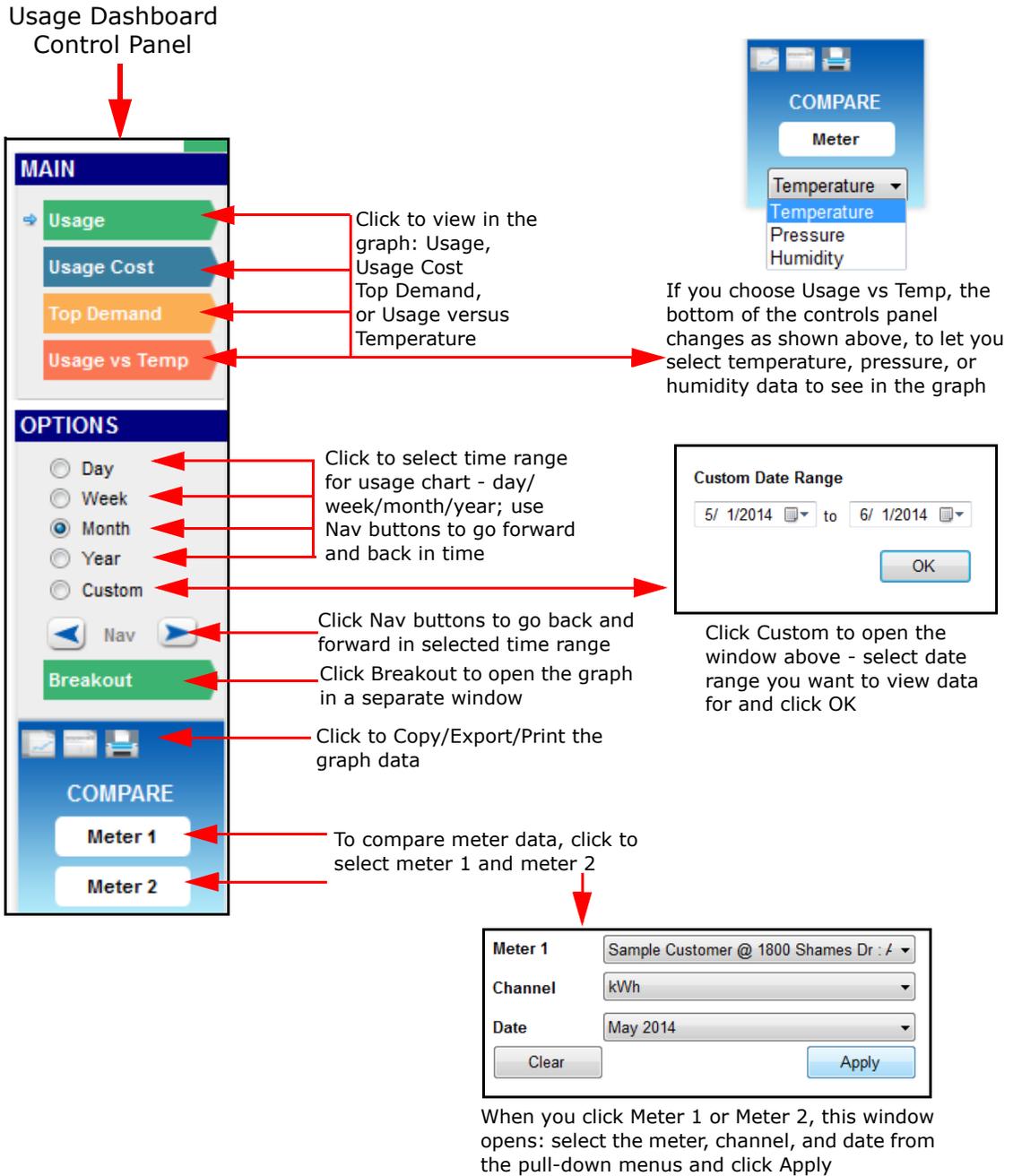
1. To open the Usage Dashboard, click on the Dashboard Viewer icon either at the top or the middle right of the Dashboard Viewer screen.



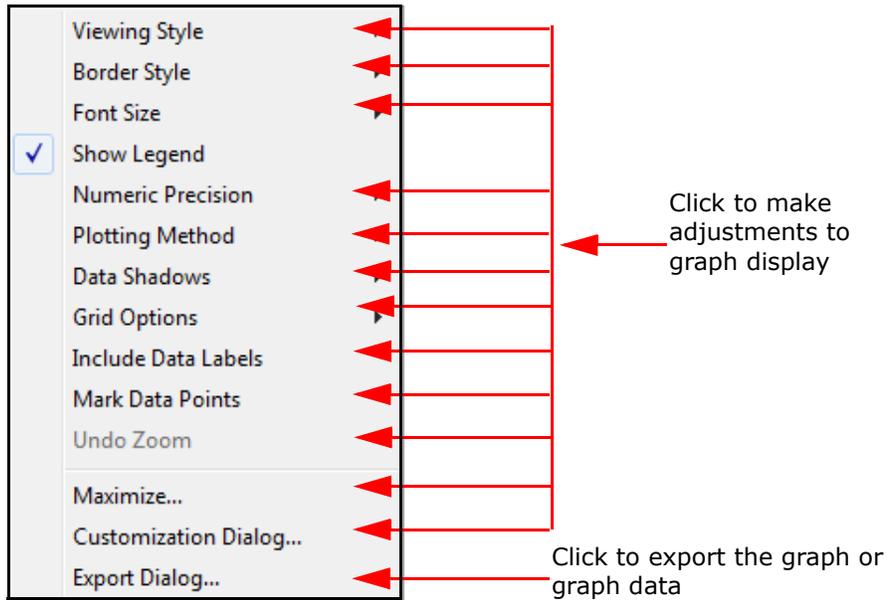
2. The Dashboard Viewer opens.



The monthly usage is shown for the current month. There are controls to the left of the Usage Dashboard. See the diagram below for an explanation of the controls.

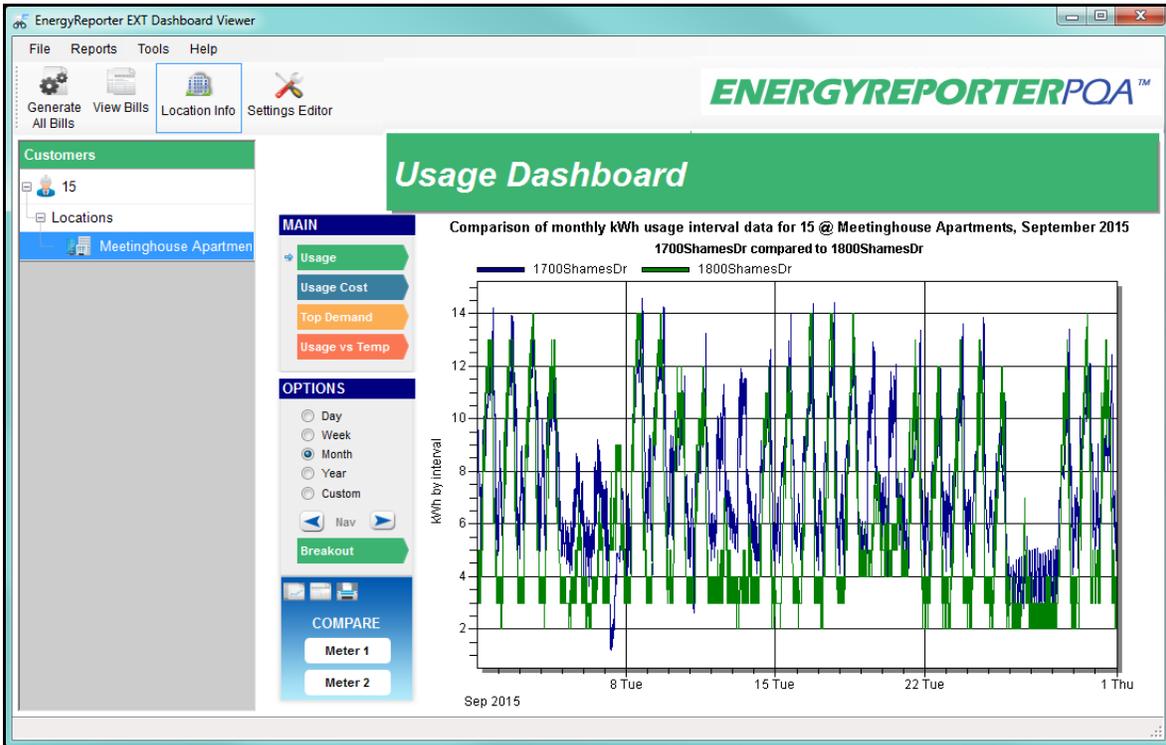


You can also right-click in a graph to open a sub-menu.

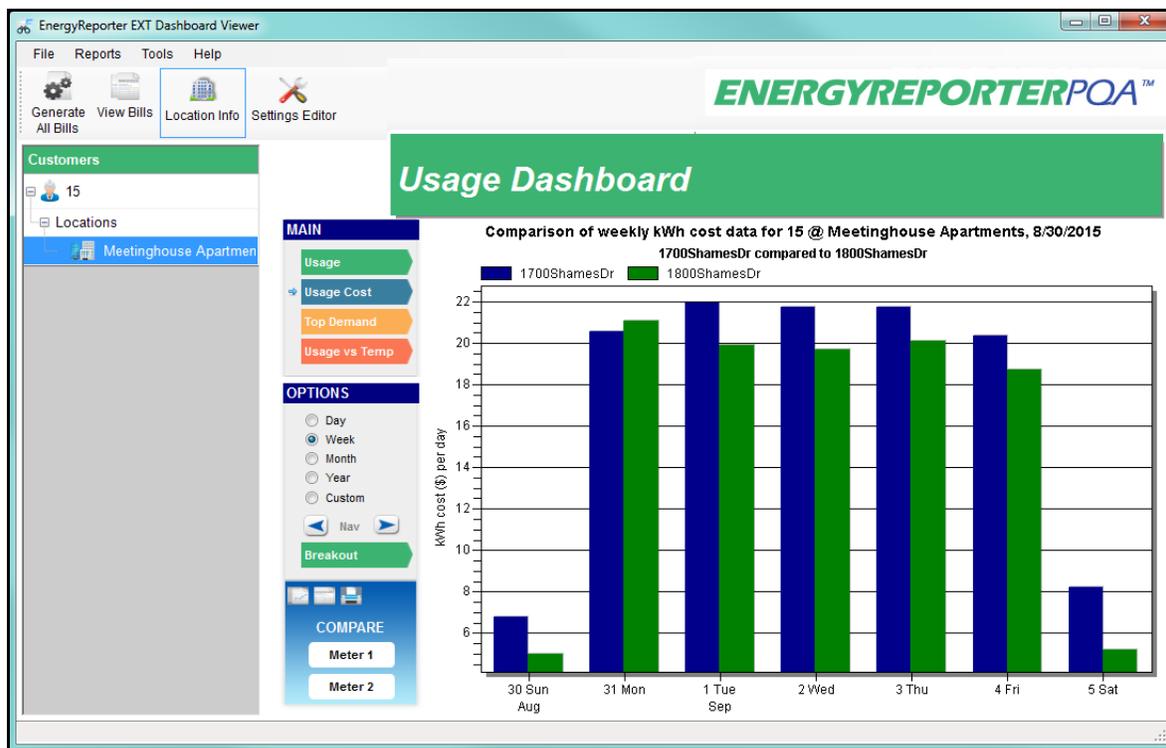


The following pages show examples of different graph selections.

Two Meter Usage Comparison for One Month



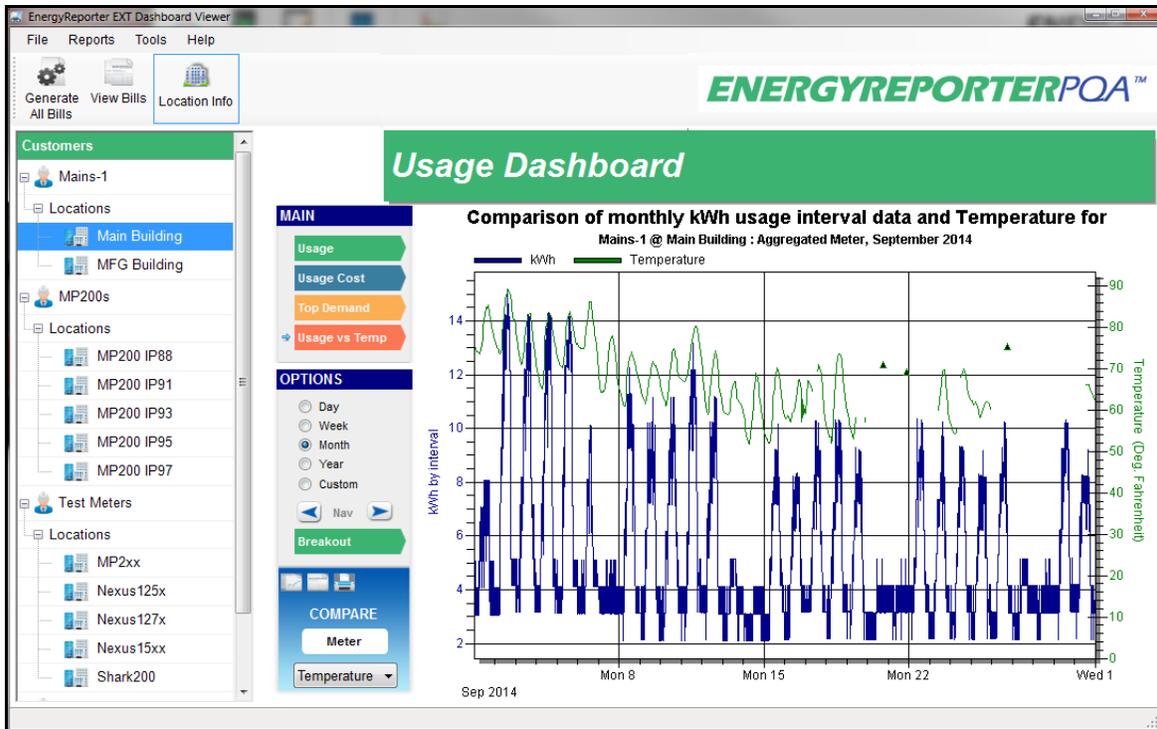
Two Meter Usage Cost Comparison for One Week



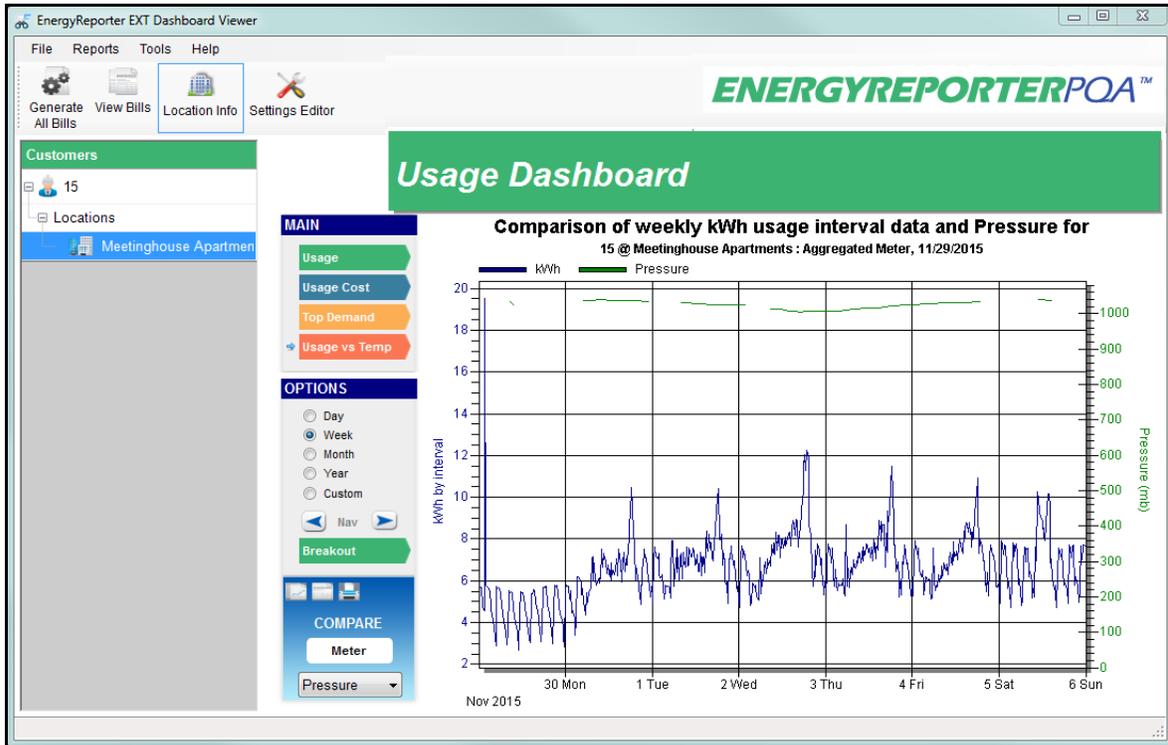
Breakout of Top Demand Comparison for Two Meters for the Year

Break Out			
Comparison of yearly kWh top demand for 15 @ Meetinghouse Apartments, 2015 1700ShamesDr compared to 1800ShamesDr			
1700ShamesDr		1800ShamesDr	
Date	kW (demand)	Date	kW (demand)
6/29/2015 6:45 PM	66.19	6/22/2015 3:00 PM	60.00
7/1/2015 5:45 PM	64.86	7/20/2015 12:15 PM	60.00
7/19/2015 3:45 PM	63.30	7/20/2015 12:45 PM	60.00
7/23/2015 6:30 PM	63.26	7/20/2015 1:45 PM	60.00
7/19/2015 4:00 PM	62.96	7/20/2015 1:15 PM	60.00
7/21/2015 5:45 PM	62.78	7/28/2015 3:00 PM	60.00
7/19/2015 4:15 PM	61.90	7/28/2015 2:30 PM	60.00
7/23/2015 5:45 PM	61.89	7/20/2015 4:00 PM	60.00
6/9/2015 6:30 PM	61.80	7/20/2015 3:15 PM	60.00
7/19/2015 6:45 PM	61.47	7/20/2015 2:30 PM	60.00
7/1/2015 6:00 PM	61.41	7/29/2015 3:30 PM	60.00
7/20/2015 6:00 PM	61.31	7/29/2015 3:00 PM	60.00
7/20/2015 6:30 PM	61.31	8/31/2015 4:30 PM	60.00

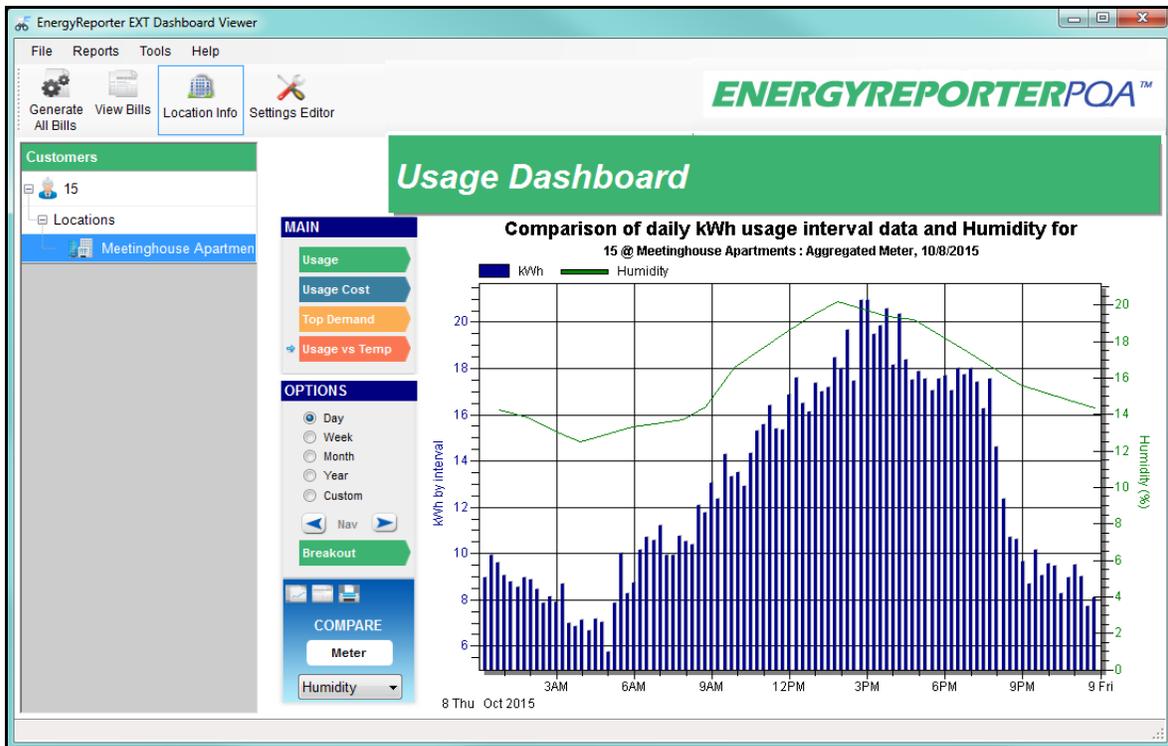
Usage Versus Weather - Temperature for the Month



Usage Versus Weather - Pressure - for One Week



Usage Versus Weather - Humidity - for One Day



3. To exit the usage dashboard, click the Location Info icon at the top of the screen.

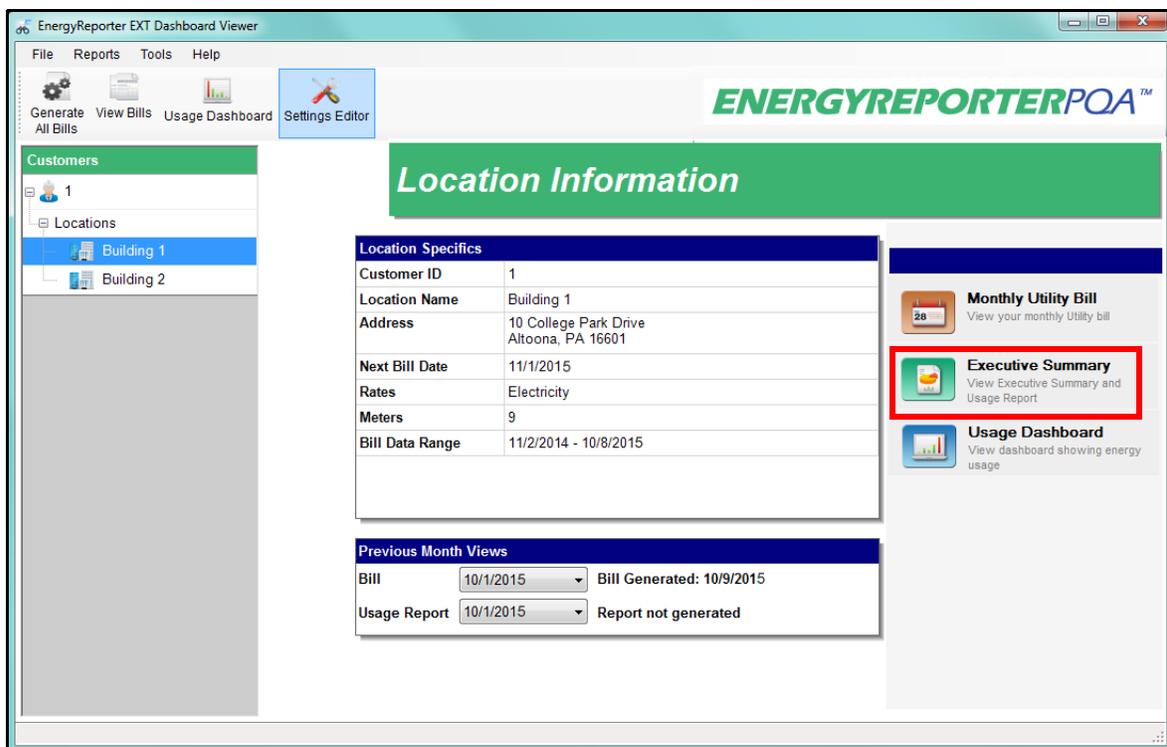
5.3: Generating and Viewing Usage Reports

The following sections explain EnergyReporterPQA™ application's usage report options.

5.3.1: Executive Summary Usage Report

The Executive Summary Usage Report is a customized report containing the location and data you specify, or, for all customer locations, containing extensive, detailed usage information. It is designed to provide a complete picture of energy consumption, including analytics on usage patterns and contributing factors, such as weather.

1. From the Dashboard Viewer's Location Information screen, click the Executive Summary icon on the right side of the screen.



2. You will see the window shown on the next page. Use it to select the data you want to see in your report. This feature lets you generate a customized report with only the data you want.

For example, you can choose to view the highest usage per meter, or the total usage per meter during the Peak Day.

Executive Summary Usage Report

Customer Susan Richards
 Location Meetinghouse Apartments
 Date August 2015

Report Type
 Channel kWh

Generate for all customer locations

Report Options
 Display Demand

Reports to include

- Report Overview
- Monthly Usage Summary
- Highest Usage Meter Comparison
- Usage At a Glance
- Meter - Total Usage during Month
- Meter - Total Usage during Peak Week
- Meter - Total Usage during Peak Day
- Meter - Average Hourly and Daily Usage

Generate

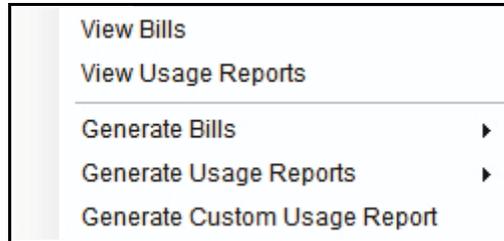
NOTE: Usage reports can be very large. Because of this, executive summary usage reports cannot be generated for customers that have more than 200 meters (across all their locations). In addition, executive summary usage reports cannot be generated for any location with more than 100 meters.

3. Select the channel from the pull-down menu.
4. Note that the location you are currently viewing is displayed at the top of the screen. That is the only location whose data will be shown unless you select Generate for all customer locations by clicking in its checkbox.
5. If you want to see demand in your report, select Display Demand by clicking in its checkbox.
6. Click the checkboxes of the data you want included in the report. By default, all of the data is selected. Click on a box to uncheck it if you don't want that data in your report.

7. Click Generate. You will see a message while the report is being generated and then it will display on the screen. A sample Executive Summary Usage Report follows.

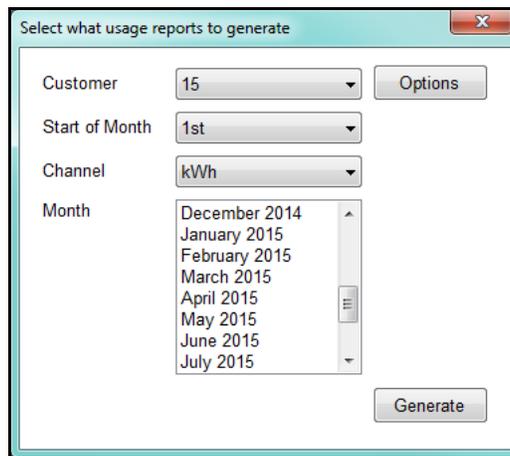
5.3.2: Generate Usage Reports

Click Reports in the Dashboard Viewer main screen's Menu bar. You will see the sub-menu shown below.



There are two Report options - Generate Usage Reports and View Usage Reports.

1. Click Reports>Generate Usage Reports>Generate Customer Report. You will see the screen shown below.



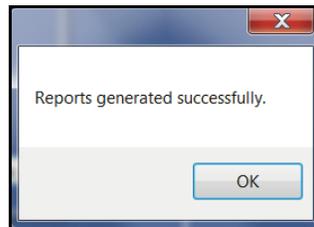
2. Select the customer, start date for the month, and channel. The Month box fills with the available months for the customer (the months which contain usage data).
3. Click each of the month(s) you want to create the usage report for.

4. Click Options. You will see the screen shown below.

5. Configure the following settings:

- The default path is displayed in the Output Path field. Click the Browse button if you want to choose another output path for the file. This is where the report will be saved.
- The Use Default Report Name checkbox is already selected. The default report name is the customer number, commodity, and date of the usage, e.g., 11567_kWh_2013-03 for a report of kWh usage data for March 2013 for customer number 11567. If you want to use a different name for the usage report, un-check the box and enter a name in the blank field next to it.
- File format: your format choices are PDF (Adobe PDF document), RTF (rich text format), or HTML (for viewing over the web).
- Report Commodity: select the commodity you want to use from the pull-down menu. Usage reports are only generated for a single commodity at a time.
- Click Single Page Summary if you want to have the month, week, and day usages on the same page.

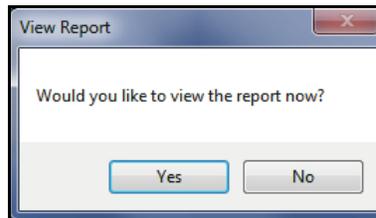
- If you select Single Page Summary, you can also select Overlay Interval Data. Click this option if you want to have trend data or Demand data (if you select the display Demand option) on the same graph as the usage bars.
 - You can select to colorize either TOU or periods.
 - Display Demand: labels the Interval usage report as Demand.
6. Click OK. The screen closes and you see the previous screen. Click Generate to process the report. You see a progress message while the report is being generated. When the process is complete, you see the following message window.



7. Click the OK button to close the message window. Another window opens asking if you want to view your report. See the next section.

5.3.2.1: View Usage Reports

When you generate a Usage report you have the option to view it right away.



Click Yes to open the report. See the sample report in Appendix A.

1. To view Usage reports at any time, click Reports>View Usage Reports. See the example screen shown below.

Report	Date	Status
15		
15 {kWh}		
15 {kWh}, November 2014	November 2014	Report Generated: 11/25/2015
15 {kWh}, December 2014	December 2014	Report Generated: 11/25/2015
15 {kWh}, January 2015	January 2015	Report Generated: 12/11/2015
15 {kWh}, February 2015	February 2015	Report Generated: 12/11/2015
15 {kWh}, March 2015	March 2015	Report Generated: 12/11/2015
15 {kWh}, April 2015	April 2015	Report Generated: 12/11/2015
15 {kWh}, May 2015	May 2015	Report Generated: 12/11/2015
15 {kWh}, June 2015	June 2015	Report Generated: 12/11/2015
15 {kWh}, July 2015	July 2015	Report Generated: 12/11/2015
15 {kWh}, August 2015	August 2015	Report Generated: 11/25/2015
15 {kWh}, September 2015	September 2015	Report not generated
15 {kWh}, October 2015	October 2015	Report not generated
15 {kWh}, November 2015	November 2015	Report not generated
15 {kWh}, December 2015	December 2015	Report not generated
15 {kWh}, January 2016	January 2016	Report not generated
15 {kWh}, March 2016	March 2016	Report not generated

2. This screen lets you view all of the months with usage data for customer locations. (Click on the + signs next to customer, location, and commodity to see the list of months.) Double-click on a month to view its usage report (or click on the month and click the View Report icon). See the sample report in Appendix A.

If the report hasn't been generated yet for the month, it is generated when you select it.

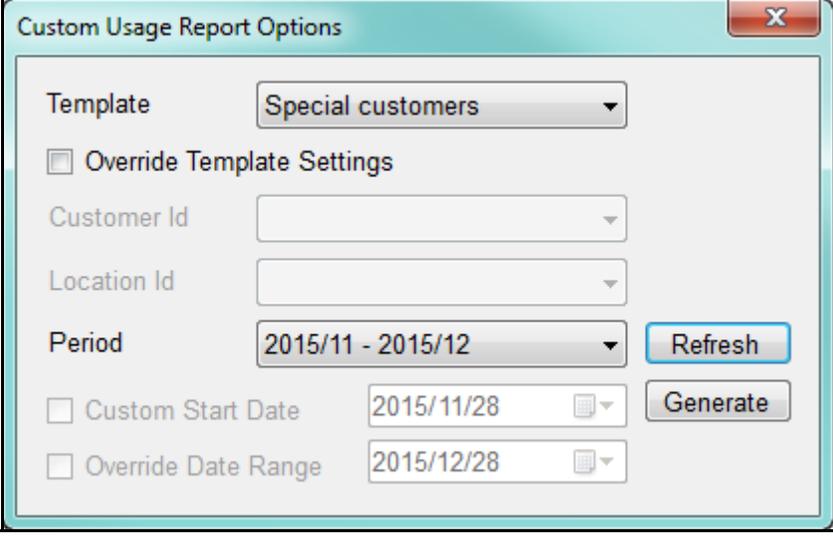
3. You can also:

- Click the Options icon to change output options before you generate another usage report, e.g., if you want to use a different format for the report. You will see the Output Options screen shown in Section 5.3.2, step 4.
- Click the Save Report icon to open a window that lets you choose a filename and a save location for a copy of the report.

5.3.3: Generate Custom Reports

As mentioned in 4.1: Set Up a Provider, on page 4-4, you can choose to manually generate a Custom report. To do so:

1. Select Reports>Generate Custom Usage Report from the Dashboard Viewer's Menu bar.

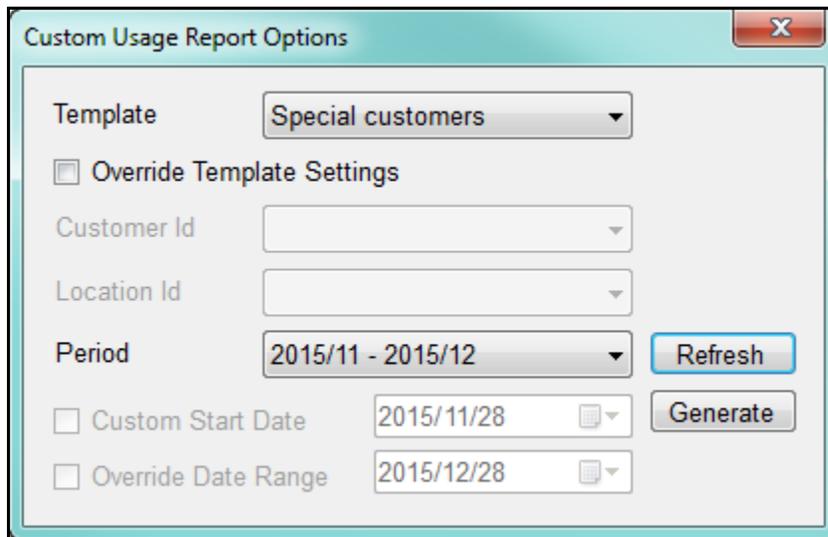


The screenshot shows a dialog box titled "Custom Usage Report Options" with a close button (X) in the top right corner. The dialog contains the following fields and controls:

- Template:** A dropdown menu currently set to "Special customers".
- Override Template Settings:** An unchecked checkbox.
- Customer Id:** A dropdown menu.
- Location Id:** A dropdown menu.
- Period:** A dropdown menu currently set to "2015/11 - 2015/12". To its right is a "Refresh" button.
- Custom Start Date:** An unchecked checkbox next to a date field set to "2015/11/28" with a calendar icon.
- Override Date Range:** An unchecked checkbox next to a date field set to "2015/12/28" with a calendar icon.
- Generate:** A button located to the right of the date fields.

2. Select the custom usage report template you want to use from the pull-down menu.
3. If you want to generate the report for another customer and/or location, or for alternate dates, click the Override Template Settings box to check it. You will then be able to choose another customer from the pull-down menu. Once you have chosen a customer (other than "All"), you will be able to choose a customer location from the pull-down menu.

4. Click the Refresh button.



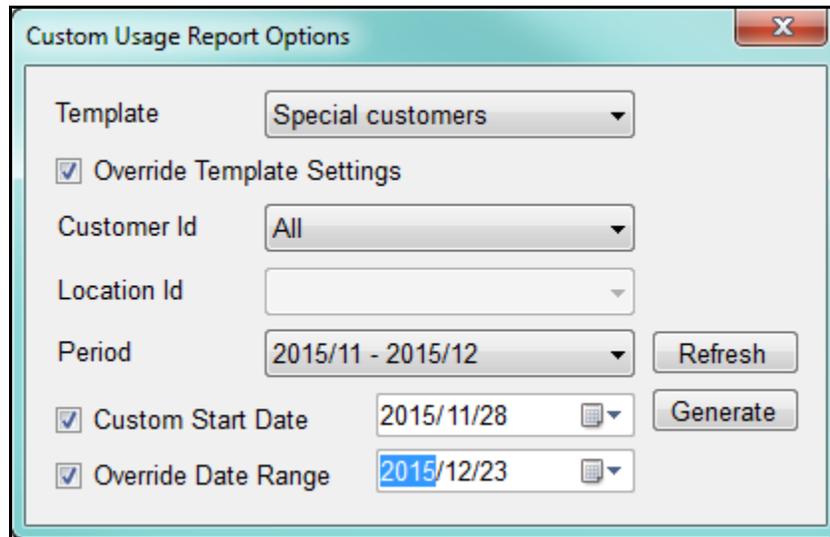
The screenshot shows a dialog box titled "Custom Usage Report Options" with a close button (X) in the top right corner. The dialog contains the following fields and controls:

- Template:** A dropdown menu currently showing "Special customers".
- Override Template Settings:** An unchecked checkbox.
- Customer Id:** An empty dropdown menu.
- Location Id:** An empty dropdown menu.
- Period:** A dropdown menu showing "2015/11 - 2015/12". To its right is a blue "Refresh" button.
- Custom Start Date:** An unchecked checkbox next to a date field showing "2015/11/28" and a calendar icon.
- Override Date Range:** An unchecked checkbox next to a date field showing "2015/12/28" and a calendar icon.
- Generate:** A button located to the right of the date fields.

5. You will now be able to select the period for the report from the pull-down menu. If you chose earlier to override template settings, you can also:

- Change the start date - click the Custom Start Date box to check it and select the start date from the calendar displayed when you click the arrow.
- Override the custom report's date range - click the Override Date Range box to check it and select the end date from the calendar displayed when you click the arrow.

See the example screen, below.



Custom Usage Report Options

Template: Special customers

Override Template Settings

Customer Id: All

Location Id:

Period: 2015/11 - 2015/12

Custom Start Date: 2015/11/28

Override Date Range: 2015/12/23

Buttons: Refresh, Generate

6. Click Generate to generate the report. The report will be automatically shown, but is accessible under:

C:\Users\Public\Public Documents\Electro Industries\E-Billing Ext\Reports\Custom Usage\User

Note that this path can be changed - see 7.2.1: Path Setting, on page 7-3, for instructions.

5.4: Generating and Viewing Customer Bills

You use the EnergyReporterPQA™ application's Dashboard Viewer to generate and view bills. See the diagram below.

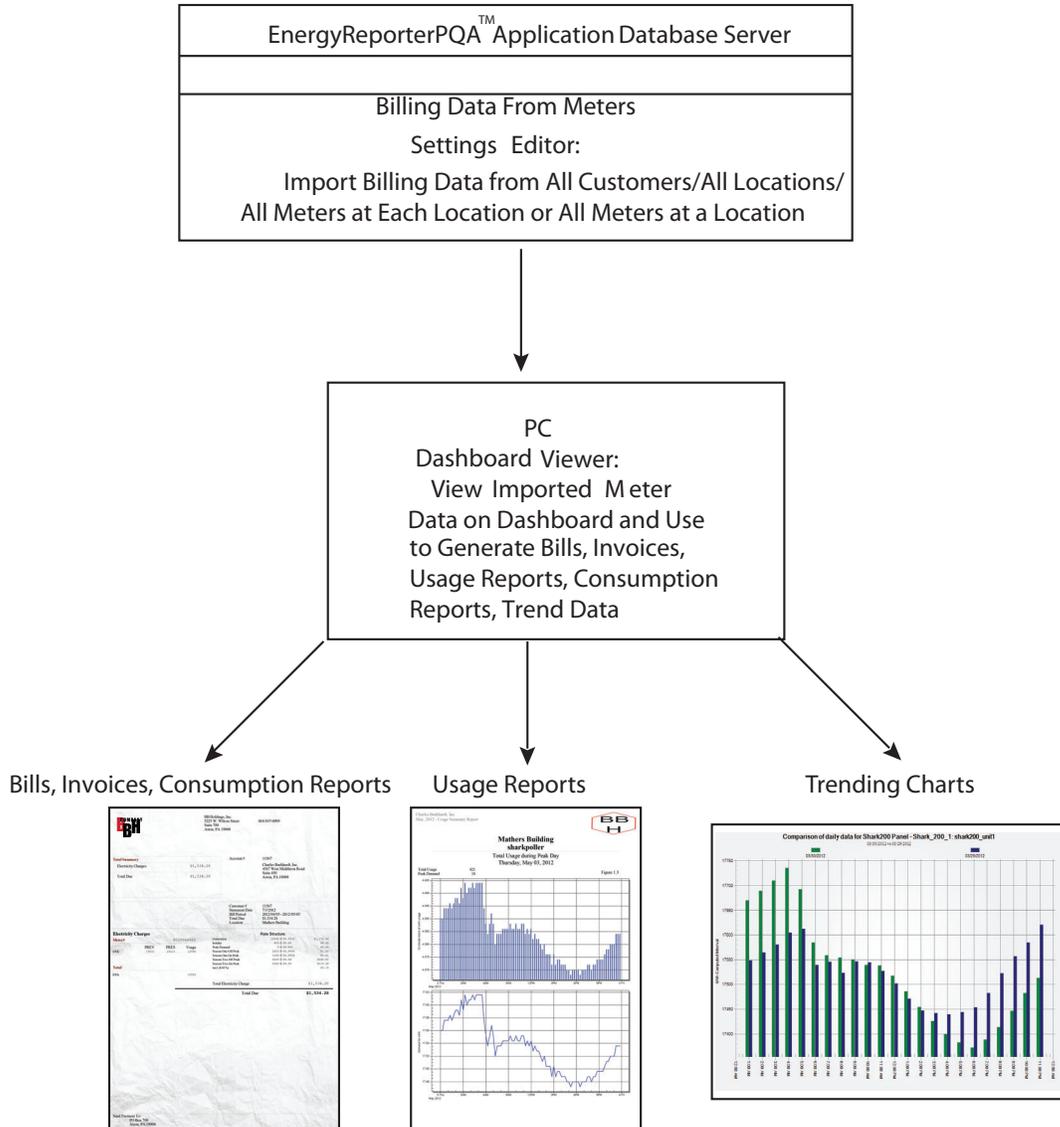


Figure 5.2: Bill Generation through the EnergyReporterPQA™ Application

Bills/invoices and reports are automatically generated every twelve hours, for any location for which there is a full months' worth of data. You can also manually generate bills and reports if you want.

5.4.1: Individual Bills and Invoices

Bills and invoices can be generated individually for a specific location and bill/invoice period.

1. Select the location from the Location Tree on the left of the main screen, then select the Bill/Invoice Period to view by selecting it in the list of Available Bill/ Invoice Data. If the bill/invoice has already been generated for the period, the generation date will be shown next to the billing period. See the screen shown below.

NOTES:

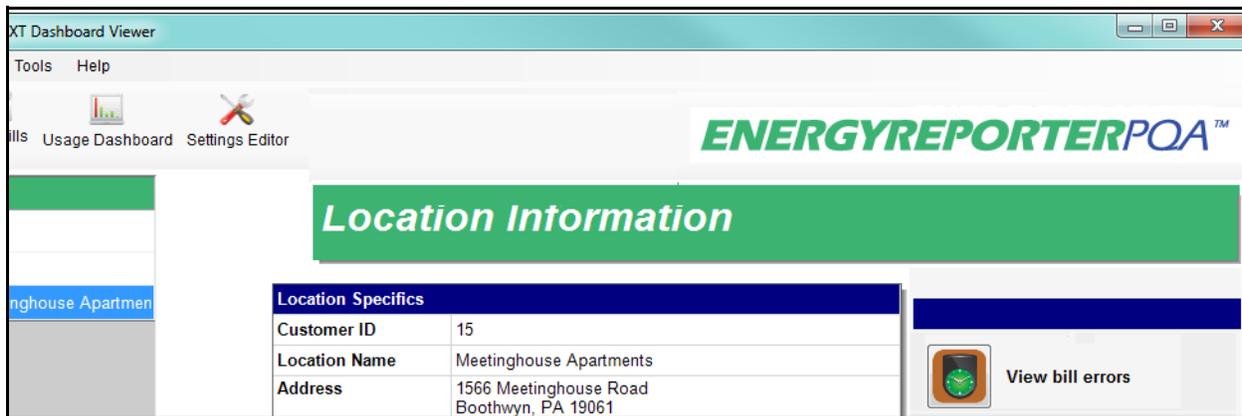
- It may take a while for the data to be displayed if there are multiple meters at the location, or if there is a lot of data to search. Please be patient.
- If the invoice parameter has been set, "Invoices" will replace "Bill" in the screen below. See 4.1: Set Up a Provider, on page 4-4, for instructions on setting the invoice parameter.

The screenshot shows the EnergyReporter EXT Dashboard Viewer interface. On the left, a 'Customers' tree lists various customer IDs and their locations. A red arrow points to customer ID 12457 with the annotation '1. Click on a customer'. Another red arrow points to 'Building 4' under customer 12457 with the annotation '2. Click on a location'. The main area displays 'Location Information' for customer 12457, including details like Location Name (Building 4), Address (400 Wopsonnock Road, Altoona, PA 16601), Next Bill Date (11/1/2015), Rates (Electricity 2), Meters (1), and Bill Data Range (5/26/2015 - 9/28/2015). Below this, 'Previous Month Views' shows a dropdown for 'Bill' set to '9/1/2015' with 'Bill Generated: 11/1/2015' and a dropdown for 'Usage Report' set to '9/1/2015' with 'Report not generated'. A red arrow points to the '9/1/2015' dropdown with the annotation 'Select a bill period', and another red arrow points to '11/1/2015' with the annotation 'Date the bill was generated'. On the right, a 'View Monthly Data' panel contains icons for 'Monthly Utility Bill', 'Executive Summary Usage Report', and 'Usage Dashboard'. A red arrow points to the 'Monthly Utility Bill' icon with the annotation 'Click Monthly Utility Bill'.

2. Click the Monthly Utility Bill/Invoice icon. The software checks to see if the period you selected contains valid data.

NOTE: If you want to generate a bill/invoice for a time period outside of the regular billing period, for example, a bill for only 3 days, hold control-shift when clicking the Monthly Utility Bill button, and then enter the date range for the bill you want to generate.

- If the Period contains errors, the View Errors icon appears (see the partial screen, following). Click this icon to see a list all of the errors that prevent the bill from being generated.



- Click on a channel to view the errors in the meter data records. Follow the instructions in Section 6.1.7 to correct errors.

NOTES:

- Errors can only be corrected from the Settings Editor.
 - Typically, the errors in .DEMAND and .INTERPOLATE.INTERVAL are caused by the problems in the Root Commodity value. Correct that value before checking the others.
 - If the Period contains no data, the Monthly Utility Bill icon is greyed out and displays the message "Unable to generate monthly bill: too many records missing from period." This happens if you have less than 2 days' worth of data.
3. While the Bill/Invoice is being generated, the progress is displayed in a screen.

NOTE: You can generate multiple bills/invoices for a single bill period, so if you click the Generate Monthly Bill/Invoice for Selected Bill Period icon twice, you will generate two bills/invoices.

4. Once generated, the bill/invoice opens in your screen. See the example bill, below.



Provider Information

Greater Altoona Realty Corp
10 W. 8th Street Suite 300
Altoona, PA 16601 555-980-4785

Total Summary

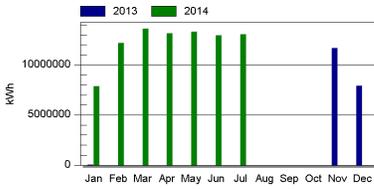
Electricity Charges	\$19,527.44
Total Due	Total Charges
Due Date	Due Date

Account 1

College Park Apartments
1 College Park Drive
Altoona, PA 16601

Usage Chart

Electricity Charges (kWh)



Meter	PREV	PRES	Usage
1500_NJD	N/A	N/A	175
1800ShamesDr	186008	206126	20118
Office DS	203	252	50
Office JK	29	38	9
Office JS	203	252	50
Office RK	1401	1578	177*
Office RM	229	293	64
Office RP	68	83	16
Shark200_Unit9	40039580	53035912	12996332
Total			13016989

Rate Structure:	Electricity	Itemized Charges
Season Two Holiday	433198 @ \$0.0015	\$649.80
Season Two Off Peak	3414425 @ \$0.0015	\$5,121.64
Season Two On Peak	9169366 @ \$0.0015	\$13,754.05
Usage (0.01%)		\$1.95
Total Electricity Charge		\$19,527.44

Provider Notes

Thank you for your prompt payment.

NOTE: If this bill was generated from Interval Energy data, there will be no PREV(ious) or PRES(ent) usage values.

Remittance Address

Send Payment To:
Greater Altoona Realty Corp
PO Box 3452
Altoona, PA 16601-3452

Total Due **\$19,527.44**

Page 1 of 1

See the example invoice, below.



Provider Information

Provider 1
24 Main St
Anytown, NY

Invoice Request

555-1234

This is not a bill, it is a request for an invoice.

If Acme does not receive any response or invoice, Acme will issue a check for the amount disclosed in this invoice request form, once the check is cashed the charges will be indisputable.

Invoice Header

Address Blank

To: _____
Address: _____

Customer Information

Account Customer 1
Customer 1
1800 Shames Drive
Westbury, NY

Same as bill without "Total Due".

Location Site Number

Site Number 22334455

Total Summary

Eventum6949 Charges	\$39,553,670.00
Estimated Total	\$39,553,670.00

Customer Customer 1
Statement Date 5/14/2019
Reading Period 4/5/2018 - 5/4/2018 (30 Days)
Total Charges \$39,553,670.00
Location Shark 270

Eventum6949 Charges (kWh)



Meter	PREV	PRES	Usage
IP31	0	0	0
IP32	0	0	0
IP33	13548417	26413921	12865804
Total			12865804

Rate Structure: Eventum6949

Season Two On Peak	6394531 @ \$4.00	\$25,578,124.00
Season Two Off Peak	2143728 @ \$3.00	\$6,431,184.00
Season One On Peak	3035077 @ \$2.00	\$6,070,154.00
Season One Off Peak	1292168 @ \$1.00	\$1,292,168.00
Peak Demand	18204 @ \$10.00	\$182,040.00

Total Eventum6949 Charge \$39,553,670.00

Estimated Charges **\$39,553,670.00**

Provider Notes

This is bill notes

5. If you enabled Consumption Reports in the Report Settings screen (see 4.1: Set Up a Provider, on page 4-4), the consumption report is emailed with every bill. See the example consumption report, below.



Address Blank

To: _____

Address: _____

Provider Information

Provider 1
24 Main St
Anytown, NY

Consumption Header Override

Consumption Header appears here.

Electric Consumption Report

Account: _____

Site Number: 22334455

Customer Information

Customer 1
Customer 1
1800 Shames Drive
Westbury, NY

Location Site Number

Customer Statement Date: Customer 1
5/28/2019

Bill Period: 4/1/2019 - 4/30/2019 (30 Days)

Location: shames

Another Flat Charges (kWh)



Meter	PREV	PRES	Usage
1700ShamesDr	78290	96411	18121
BEDBH (37)aa	964935	129881	164946
Office FD xx	2471	2499	28
Total			183095

Provider Bill Notes

This is bill notes

Consumption Footer override appears on every page.

Mailing Address:
Building
c/o Landlord Relations
10 Main Street
Westbury, NY

Page 1 of 1

5.4.2: Generate Bills/Invoices Manually

Bills/invoices are generated manually from the Dashboard Viewer. When a bill/invoice is generated, the software analyzes the usage data for the meters at a location, and applies the configured rate structure to that data.

A bill/invoice is always generated for a bill period, which is the date range from the billing date of the previous month, to the billing date of the current month. A bill period need not contain a full month's worth of data: a bill can be manually generated if there is at least two days' worth of data.

Generate All Bills/Generate Invoices

1. From the Dashboard Viewer main screen, click the Generate All Bills/Gen Invoices icon.
2. While the software is scanning for bills/invoices to generate, the list of periods found so far are displayed. You can stop the scan at any time to generate bills from the list of values scanned so far: to do so, click Cancel.
3. When scanning is done (or after you've clicked Cancel), the list of available periods is displayed. See the screen shown below.

Bill Period	Generate?	Status
12457		
Building 6		
5/1/2013 to 6/1/2013	<input checked="" type="checkbox"/>	OK
6/1/2013 to 7/1/2013	<input type="checkbox"/>	Invalid records
7/1/2013 to 8/1/2013	<input checked="" type="checkbox"/>	OK
8/1/2013 to 9/1/2013	<input checked="" type="checkbox"/>	OK

Select the checkbox for the bills to generate. If the bill has already been generated, or there are errors with the bill data, then the bill has already been deselected for generation.

4. Select which periods you want to generate bills/invoices for, by checking the Generate box. By default, all periods which have no errors, and haven't been generated

before, are selected for generating bills/invoices (their box is checked).

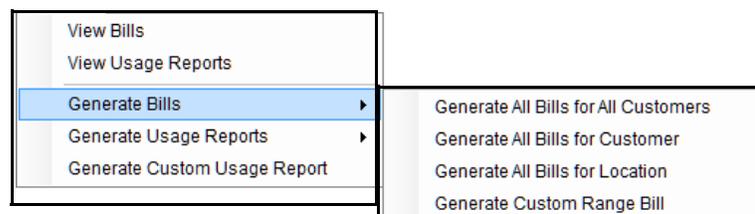
NOTES:

- Any period which already has a bill/invoice generated for it appears in grey with an unchecked box. You can still select it, if you want to generate another bill/invoice for that period, e.g., if the meter's data was changed after the bill/invoice was generated. This can happen if you generate a bill/invoice before the end of the month.
- Any period which contains errors, or is missing too much data, appears in red. You cannot generate bills for these periods until you correct the errors (see Section 6.1.7 for instructions).

5. When you've selected all the periods you want to generate bills/invoices for, click Generate. While the bill is being generated, the progress is displayed. The Bills to Generate screen closes once the bills have been generated.

Generate All Bills/Invoices for Customers/Location

Since the Generate All Bills/Gen Invoices option can take a long time to complete, the EnergyReporterPQA™ application gives you additional options for generating a smaller number of bills. Access these options from the Reports>Generate Bills/Generate Invoices submenu from the Dashboard Viewer main screen's Menu bar. The submenu is shown below.



NOTE: When Invoice has been set, Invoice(s) replaces Bill(s) in all the menus shown.

- Click Generate All Bills/Invoices for Customer to generate all available bills/invoices for all locations for the selected customer (the customer currently displayed on the screen).
- Click Generate All Bills/Invoices for Location to generate all available bills/invoices for the selected location (the location currently displayed on the screen).

You will see the Bills/Invoices to Generate screen shown on the previous page. The instructions are the same as those shown in the **Generate All Bills/Gen Invoices** section on the previous page, steps 4 and 5.

- Click Generate Custom Range Bill/Invoice to generate a one-time bill or invoice.

Generate Custom Range Bill

Customer / Location Customer 1 shames

Bill Data Range 4/1/2018 - 7/19/2019

Date Range 4/ 1/2018 7/19/2019

Days 4/ 1/2018 1 Days

Bill Period 7/11/2019 Bill not generated

Force Bill Regeneration

Type Bill
Bill
Invoice
Consumption

Generate Cancel

- Define either a date range, number of days or Bill Period.
- Select the document type; Bill, Invoice or Consumption.
- Check Force Bill Generation to override any existing document.
- Click Generate to generate and display the custom document.

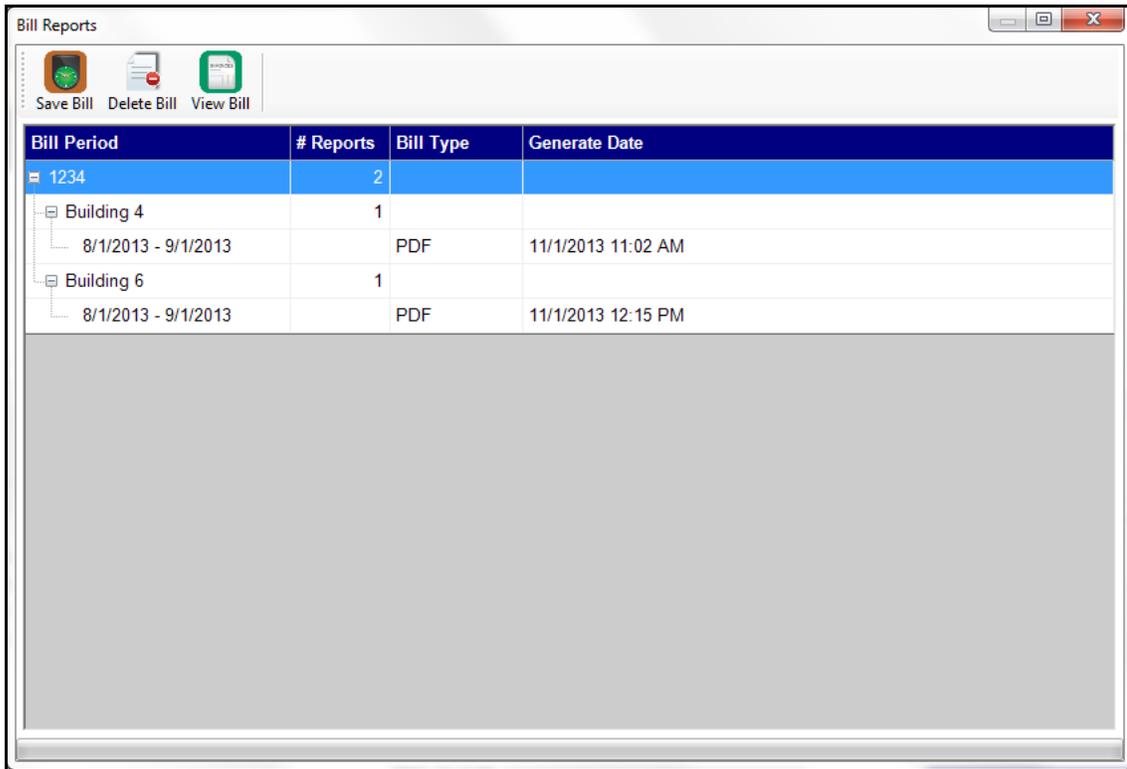
NOTE: The Generate All Bills/Invoices for All Customers option is the same as the Generate All Bills/Gen Invoices option on the previous page.

5.4.3: View Bills/Invoices

You can view generated bills either by clicking the View Bills/Invoices icon in the Dashboard Viewer's main screen, or by clicking Reports>View Bills/Invoices from the screen's Menu bar.

NOTE: The viewed bill/invoice is just a temporary file that has been downloaded from the EnergyReporterPQA™ application Database server, where the bills/invoices are stored. Any changes you make to it are not saved on the Database server.

1. The list of all generated bills/invoices displays. See the example screen below.



Bill Period	# Reports	Bill Type	Generate Date
1234	2		
Building 4	1		
8/1/2013 - 9/1/2013		PDF	11/1/2013 11:02 AM
Building 6	1		
8/1/2013 - 9/1/2013		PDF	11/1/2013 12:15 PM

2. Click on the + sign next to the customer to display the location; then click on the + sign next to the location to display the bills/invoices for the location.

3. Click on the bill/invoice you want to view and click the View Bill icon. A PDF of the bill/invoice opens (see the examples on the previous pages).

4. You have the following options:

- To save a copy of the bill/invoice on your computer, click the Save Bill icon. (Bills/invoices are stored on the database server. To get a local copy, you need to save

the bill/invoice on your computer.) A screen opens which lets you choose the location of the saved bill/invoice and give it a filename.

- To delete the bill/invoice, click the Delete Bill icon. A Confirmation window opens. Click Yes to delete the bill/invoice; click No to keep the bill/invoice.

WARNING! Be careful when deleting bills/invoices. Once you delete a bill/invoice, it is removed from the server. (You can re-generate the bill/invoice later.)

You can delete multiple bills/invoicing by selecting a range and clicking Delete. Make sure that you've selected **only** the bills/invoices you want to delete.

WARNING! Be careful when deleting across multiple locations, as it is easy to select more bills/invoices than you intend, or miss some you want to delete.

NOTE: Removing a customer or location from the system doesn't delete the bills/invoices that have already been generated for them. If you want to get rid of the bills/invoices, you must delete them manually.

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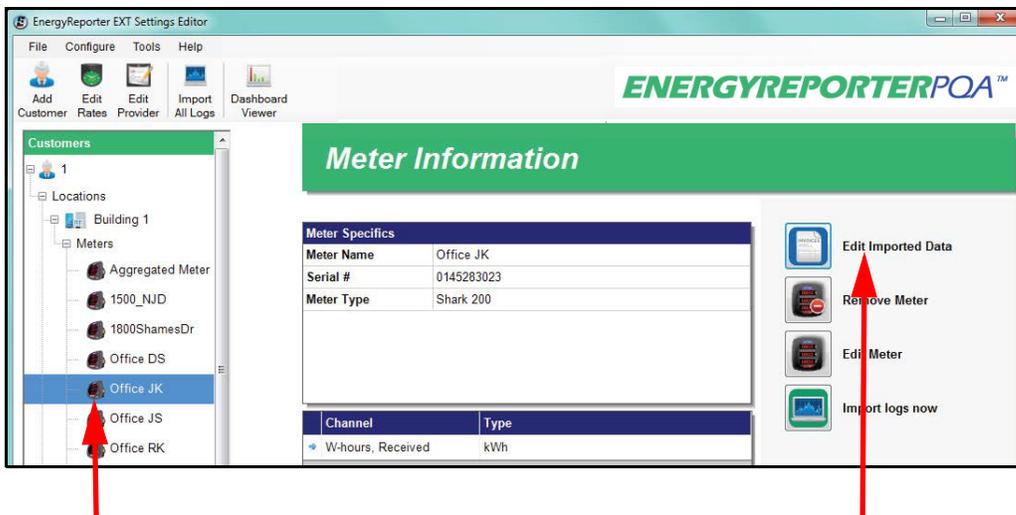
6: Managing Data

The EnergyReporterPQA™ application gives you access to the usage data in a variety of ways. You can view the data, copy it, export it, and correct any errors in the meter data.

6.1: View/Copy/Export Meter Data

Follow these steps to view, copy, or export the imported meter data.

1. From the Settings Editor main screen, use the Tree menu on the left of the screen to navigate to the meter you want. See the example screen below.



Click on meter

Click this icon

2. Click the Edit Imported Data icon.

3. This screen lets you choose which data point (channel), date range, and type of values you want to view.

- Meter: from the pull-down menu, select the meter whose data you want to view. Only meters at the currently selected location are shown.
- Data Point: the channel of the data to view. There are typically three values for each commodity:
 - a. <commodity>: this is the value from the meter's logs. These are your base usage values, and are the only values you can change, as all other values are computed from this value; e.g., kWh. If you want to view the "raw" usage data from the meter, select this option.
 - b. <commodity>.interpolate.interval: this is the computed interval value of the commodity, typically in 15 minute periods. The values are interpolated from the root commodity values to correct for odd timestamps and missing data. These values cannot be changed, as they are computed from the root commodity; e.g., kWh. If you want to view the computed interval values, select this option.
 - c. <commodity>.DEMAND: this is the maximum Demand for an hour period, computed from the interpolated interval values for the previous hour. These values cannot be changed, as they are computed from the root commodity; e.g., kWh.DEMAND. If you want to view the max Demand, select this option.

- **Start Date:** the start date of the data to show. You can only change this field when All Timestamps and Bill Period are unchecked.
 - **End Date:** the end date of the data to show. You can only change this field when All Timestamps and Bill Period are unchecked.
 - **All Timestamps:** select this checkbox to automatically select the entire range of stored data to show.
 - **Bill Period:** select this checkbox to see the date range of the billing data in all available billing periods. Click the pull-down menu to display the date ranges. When you select a date range, the beginning and ending date are displayed in the Start Date and End Date fields.
 - **Values to Show:** the checkboxes provide filters, so that only the data you want to see is shown, e.g., only Errors.
 - **All Values:** show all the values. If this is selected, no other option is valid.
 - **Rollover:** show values flagged as a rollover. This occurs when the previous value is near the configured rollover point, and the current value is near zero. This is not considered an error.
 - **Increasing Too Fast:** show values flagged as increasing too fast. Values which are increasing more than 3 times the trend in the previous hour are considered as increasing too fast, and might indicate a problem. This is considered an error, and must be cleared before a bill can be generated.
 - **Wobbly Value:** are interval energy values which rapidly swing up and down in sequential periods.
 - **Decreasing Counter:** show values flagged as a decreasing counter. Except for the Rollover condition, counters (such as Energy and pulse accumulators, used for Commodities) should never decrease. If they do, this indicates a problem, and must be cleared before a bill can be generated.
 - **Good Values:** show values which are not flagged with an error condition.
4. Once you've selected the filters you want to use, click View. The data is retrieved from the database and displayed. Values which are flagged as a warning are shown

in Green. Values which are errors and will prevent a bill from being generated are shown in Red. See the example screen below.

Time	Value	Error Code	Error Desc	Modified Value	Modified Date
3/9/2014 12:15 AM	36287016.00	0		0.00	
3/9/2014 12:30 AM	36291596.00	0		0.00	
3/9/2014 12:45 AM	36296176.00	0		0.00	
3/9/2014 1:00 AM	36300756.00	0		0.00	
3/9/2014 1:15 AM	36305336.00	0		0.00	
3/9/2014 1:30 AM	36309920.00	0		0.00	
3/9/2014 1:45 AM	36314504.00	0		0.00	
3/9/2014 3:00 AM	36319088.00	-104	Counter values don't ma	0.00	
3/9/2014 3:15 AM	36323676.00	-104	Counter values don't ma	0.00	
3/9/2014 3:30 AM	36328260.00	0		0.00	
3/9/2014 3:45 AM	36332852.00	0		0.00	
3/9/2014 4:00 AM	36337440.00	0		0.00	
3/9/2014 4:15 AM	36342032.00	0		0.00	
3/9/2014 4:30 AM	36346624.00	0		0.00	
3/9/2014 4:45 AM	36351216.00	0		0.00	
3/9/2014 5:00 AM	36355808.00	0		0.00	
3/9/2014 5:15 AM	36360396.00	0		0.00	
3/9/2014 5:30 AM	36364992.00	0		0.00	
3/9/2014 5:45 AM	36369588.00	0		0.00	
3/9/2014 6:00 AM	36374184.00	0		0.00	

This screen lets you view the values, correct any errors in the data, and export the data for external use.

NOTES:

- This screen is available from both the Settings Editor and the Dashboard Viewer, but you can only modify the values using the screen from the Settings Editor. To view this screen from the Dashboard Viewer, select the meter whose data you want to view and click Tools > View Bill Data. Only 20,000 points are displayed on the interface at any time. If you are trying to view more than that number of points, click the Next and Previous buttons to scroll the data.
- The preferred method for correcting data errors is described in Section 6.2.
- When viewing Interval Energy values, the times displayed for the values are the beginning of the billing interval the value belongs to.

- The buttons on the top of the screen and their functions are shown below.



Refresh: click after Update Data icon to display changes



Update Data: click after making changes



Click to clear an Invalid Flag from the currently selected data value



Click to Delete/Undelete the currently selected data value



Click to export data (see Section 6.1.1)



Click to show data values that have been removed - then you can click the Undelete icon and the Update Data icon to restore the value

6.1.1: Export Meters Data

You can export meter data in two ways.

From the Edit Imported Data Screen (shown in Section 6.1: only for the Settings Editor)

1. Click the Export Data icon shown above.

This screen lets you export the data to either the clipboard or a .csv file. Then you can copy the data into another application, such as the Microsoft Excel® application, or use it in your own applications.

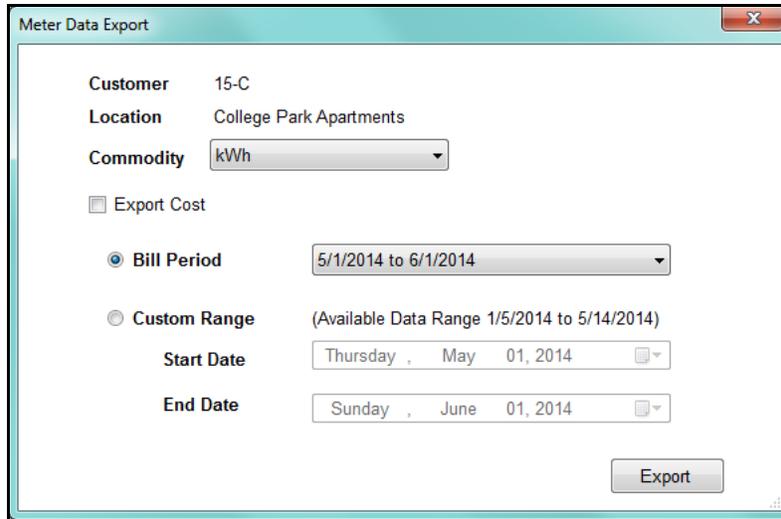
2. Use the options in the Output box to specify where to export the data:

- CSV File: exports the data to a CSV (Comma Separated Value) Text file (though you can select other than commas to separate the exported values). When you select this option, you must enter a Filename in the bottom of the screen.
 - Clipboard: exports the data to the clipboard. Be careful when using this option, as the amount of data being exported may be very large. When you select this option, you do not enter a filename.
3. The setting in the Layout box controls the layout of the data being exported. The only option is Tabular, which means the data is exported in a table format: rows are data entries and columns are fields.
 4. The settings in the Format box control how the output is formatted.
 - Column Separator: use this setting to select the character used to separate fields in a row.
 - Comma (',') is the most common separator.
 - Tab should be selected if you plan to paste the data into a spreadsheet program, e.g., the Microsoft Excel® application.
 - Space should be selected if needed by your application.
 - Line Separator: use this setting to configure the sequence of characters used to indicate the end of a row. Your options are CRLF and LF. Different operating systems and software applications expect different line endings, but CRLF is the most common.
 - Include Column Headers: click this box to put the name of the field at the top of the column, before the start of the data. You may want to leave this box unchecked when using automated processing, if your application doesn't know to discard the first line (the column headings).
 - Include Billing Event Information: click this box to export analysis information, such as error code or modified date, along with the regular data. If you leave this box unchecked, only the Timestamp and Value are exported.
 5. File Options: you will see this field if you choose the .csv file Output option. Click Browse to locate the directory for your file and enter a filename.

6. Click Export to export the data. You will see a Confirmation window when the export is complete. Click OK to close the window and the Data Export Options screen.

From the Tools>Export Meters Data (for either the Settings Editor or the Dashboard Viewer.)

1. Click Tools>Export Meters Data.

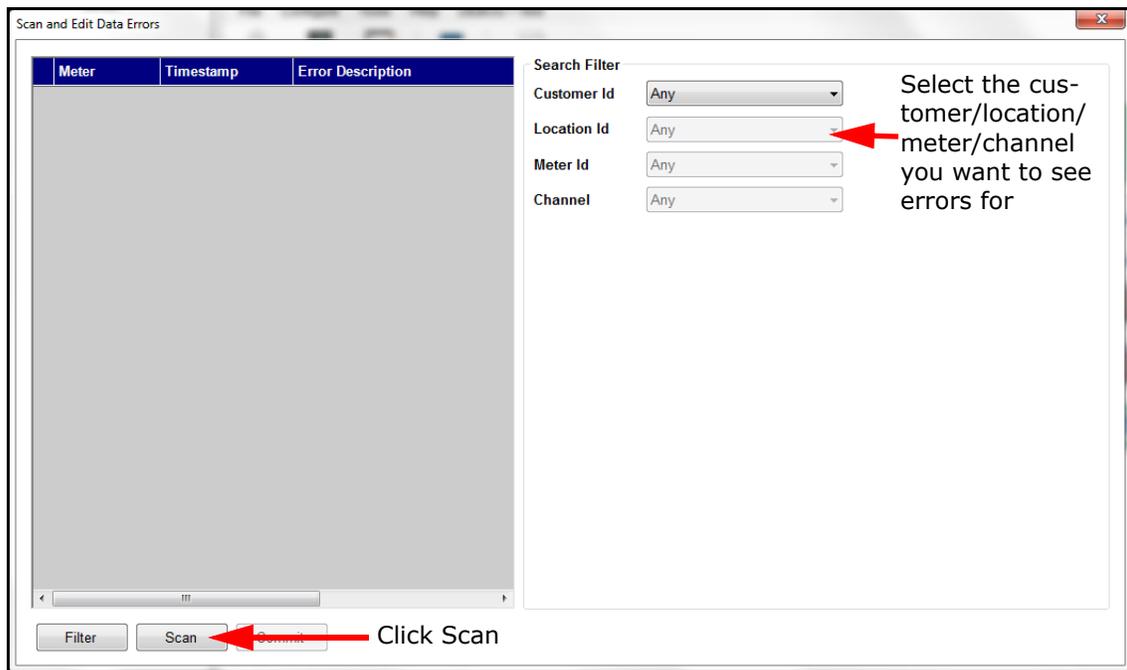


2. The currently selected customer and location are displayed in the screen.
 - Select Commodity from the pull-down menu
 - Click the Export Cost checkbox if you want cost data exported
 - Either click Bill Period and select a period from the pull-down menu, or click Custom Range and select the Start and End Date from the pull-down menus.
3. Click Export. A window opens letting you select the location of the .csv file. You can copy the data into another application, such as the Microsoft Excel® application, or use it in your own applications.

6.2: Edit Data Errors

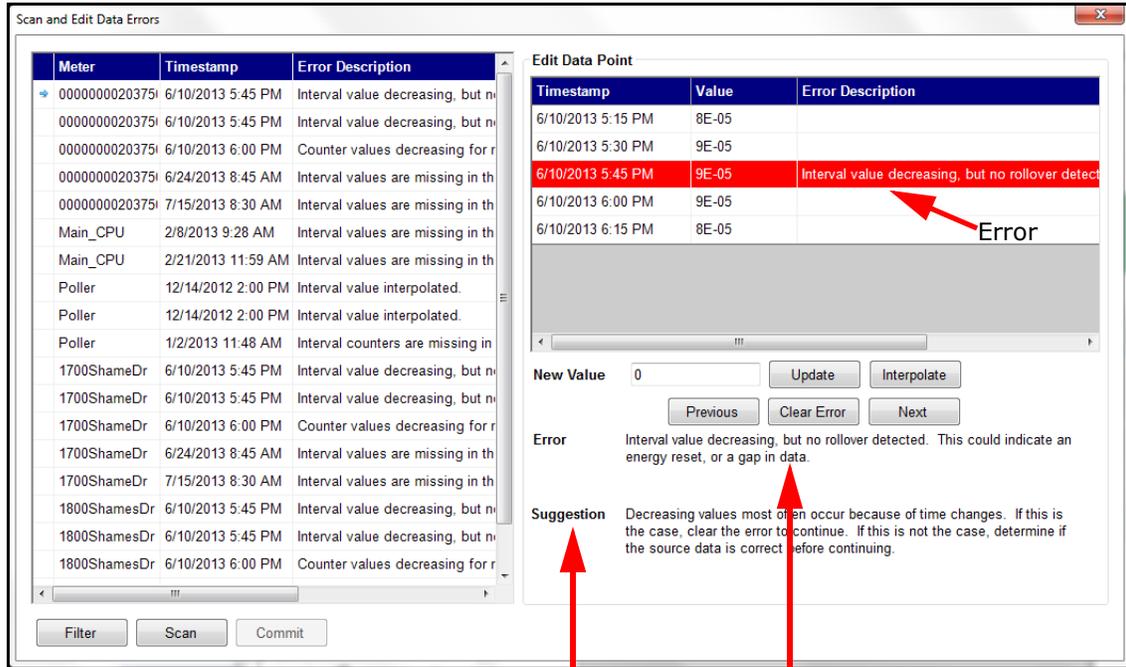
Following is the recommended procedure for correcting data errors, for example, zero values due to problems in communication.

1. From the Settings Editor Main screen, click Tools>Edit Data Errors. You will see the screen shown below.



2. You use the fields on the right side of the screen to refine your search for data errors. You can specify customer, location, meter, and/or channel, or select Any which will display data errors for all of the entries in that field; for example, to see data errors for all of the meters at a location, select the Location from the Location ID pull-down menu, and then select Any from the Meter ID pull-down menu.

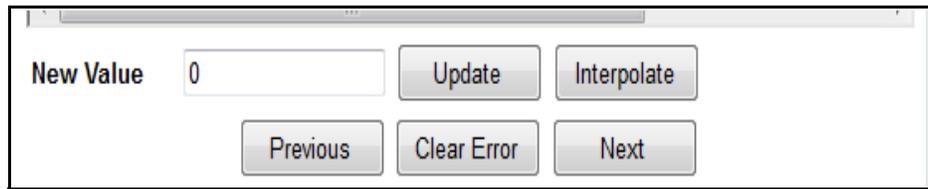
3. Click Scan to cause the software to begin looking for the data errors. When scanning is done, any errors will display on the left side of the screen, along with the meter and timestamp. The fields on the left display the Error Description field, and detailed information regarding the error and ways to handle it are displayed on the right side of the screen. See the example below.



Suggested way to handle the error Information about the error

- The top right of the screen displays the timestamp and value of the erroneous data and the timestamps and values around it, to help you diagnose the error and decide what to do about it.
- The bottom right of the screen gives information about the error and the suggested way to handle it.

- The middle right of the screen contains options you can use to handle the error.



The screenshot shows a control panel for handling data errors. It features a text input field labeled 'New Value' containing the number '0'. To the right of the input field are two buttons: 'Update' and 'Interpolate'. Below these are three more buttons: 'Previous', 'Clear Error', and 'Next'.

4. Use the options shown above to handle the erroneous data:
 - **New Value:** if you know what the value should be, enter it in this field. If the value is wrong, but you don't know what it should be, use Interpolate (see information below).
 - **Update:** after entering a new value, click this button. The next error, if there is one, is displayed. Update uses the new value for the error record. It doesn't clear the error, though, so if the new value is wrong, it will still be an error.
 - **Interpolate:** if you don't know what the value should be, click this button to have the software calculate the new value for you. The software can only do this if there are enough intervals before and after the error for it to compute the value from.
 - **Clear Error:** if the error is not something that you can correct by entering a new value, e.g., missing data, click this button. This flags the value as valid, and tells the system that you want to use this value to compute reports.
 - **Previous:** to view the error before this one, click this button.
 - **Next:** to view the error after this one, click this button.
5. Click the Commit button to save all your changes. The software re-analyzes the data, and presents the results in the Scan and Edit Errors screen. If all the data is good, the screen should show no errors.
6. If you have any more errors to correct, click Filter to re-display the selection fields on the right side of the screen, and then click Scan to view and address the errors. If you do not have any more errors to correct, click X to close the window.

6.3: Re-Aggregate All Locations

You can force all aggregate meters to reaggregate the data from their locations:

1. From the Settings Editor, click Tools>Database Maintenance>Re-aggregate all Locations.
2. You will see a progress screen as the re-aggregation is taking place.

6.4: Rebuild Period Analysis

All data ranges are based off the Period Analysis, to provide faster access to data.

You can force each location to rebuild this analysis:

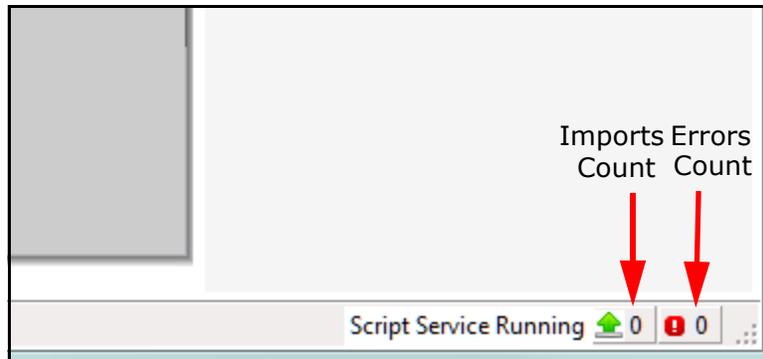
1. From the Settings Editor, click Tools>Database Maintenance>Rebuild Period Analysis.
2. You will see a progress screen as the rebuilding takes place.

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7: Additional Features and Advanced Functions

7.1: The Service Status Bar

The bottom right of the Settings Editor gives you information on the number of pending meter data imports and the number of failed imports.



The Imports Count will only show meters for which there is actually something to be imported.

To review any imports which failed, and to see details on the pending imports, click on the green arrow to display the menu with View Imports. When you click on View Imports a screen displays that allows you to see the current status of meters being imported, as well as the history of the imports.

Import Status		Import History						
Queue	0	6 Imports, 1 No Action						
Status	Updating period analysis [11/5/2016 12:00:00 AM->11/6/2016 11:45:00 PM]	Import Start	Device	Meter	Duration	Data Start	Data End	Error #
Device		01/09/2017 09:58		test	00:00:01.0338950	01/09/2016 09:58	01/16/2017 09:58	
Meter	~loc.vm.08D43875F2BDD5D9	01/09/2017 09:58		~loc.vm.08D43875F2BDD5D9	00:00:00.9937049	03/12/2016	03/13/2016 23:45	
Time Start	01/09/2017 09:58:07	01/09/2017 09:58		test	00:00:00.9564110	01/09/2016 09:58	01/16/2017 09:58	
		01/09/2017 09:57		~loc.vm.08D43875F2BDD5D9	00:00:02.3975328	09/01/2016	10/31/2016 23:45	
		01/09/2017 09:57		test	00:00:02.0326872	01/09/2016 09:57	01/16/2017 09:57	

This screen can be used to identify if there are any problems with the data being imported, as well as when a meter's data was last updated.

The Import Status section of the screen provides information about the imports currently being processed. The fields shown are:

- Queue: The number of imports which are currently pending to be done.
- Status: The action being performed by the current import.
- Device: If the meter being imported is connected to the MeterManagerPQA™ application's Meter List, the device will be listed here. This can be particularly useful, as the MeterManagerPQA™ application can automatically queue the import for the meter when it has finished retrieving the logs from the meter.
- Meter: The name of the meter that is currently being imported. For Location Virtual Meter Aggregations, the location will be listed here.
- Time Start: When the import started.

The Import History section of the screen provides information about what imports have been performed. It lists the last 1000 imports that have been performed. If nothing needed to be done for the import, it will be added to the No Action count, and no history item will be recorded.

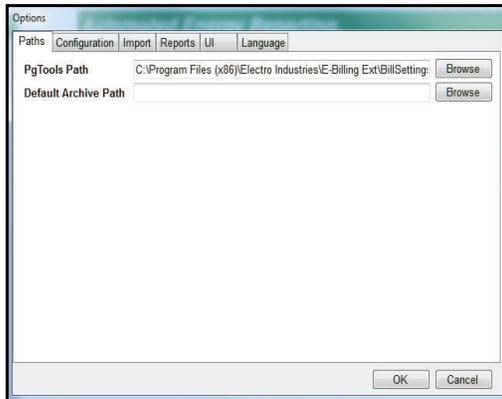
NOTE: This history will reset when the MeterManagerPQA™ Service is restarted.

The fields shown are:

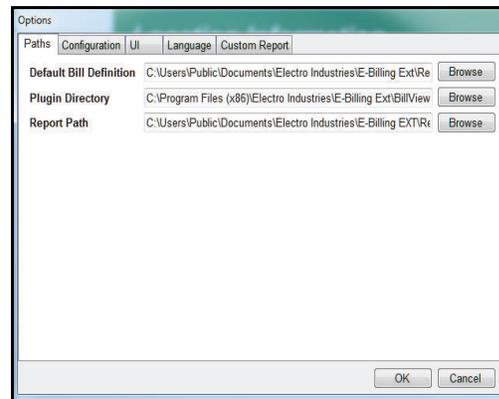
- Import Start: This lists when the import action started.
- Device: If the meter being imported is connected to the MeterManagerPQA™ application's Meter List, the device will be listed here. This can be particularly useful, as MeterManagerPQA™ software can automatically queue the import for the meter when it has finished retrieving the logs from the meter.
- Meter: The name of the meter that is currently being imported. For Location Virtual Meter Aggregations, the location will be listed here.
- Duration: How long the import took.
- Data Start: The first timestamp of the data being imported to the EnergyReporter-PQA™ application.
- Data End: The last timestamp of the data being imported to the EnergyReporter-PQA™ application.
- Error: If any errors occurred while importing the data, they will be listed here.

7.2: Option Screens

Both the Settings Editor and Dashboard Viewer have an Options screen. You access this screen by clicking Tools>Options from the main screen's Menu bar. The screen has five tabs for settings: Paths, Configuration, UI, Reports (Settings Editor) or Custom Reports (Dashboard Viewer), and Language. The settings are the same on both screens, except for the Paths setting. See the screens below.



Settings Editor Options Screen



Dashboard Viewer Options Screen

7.2.1: Path Setting

Dashboard Viewer setting:

- **Default Bill Definition:** this is the template for the bills. Click Browse to set up another location.
- **Plug-in Directory:** not used at the current time.
- **Report Path:** this is the default location for all custom usage reports, bills, and executive summary reports. Click Browse to set up another location for all of the reports.

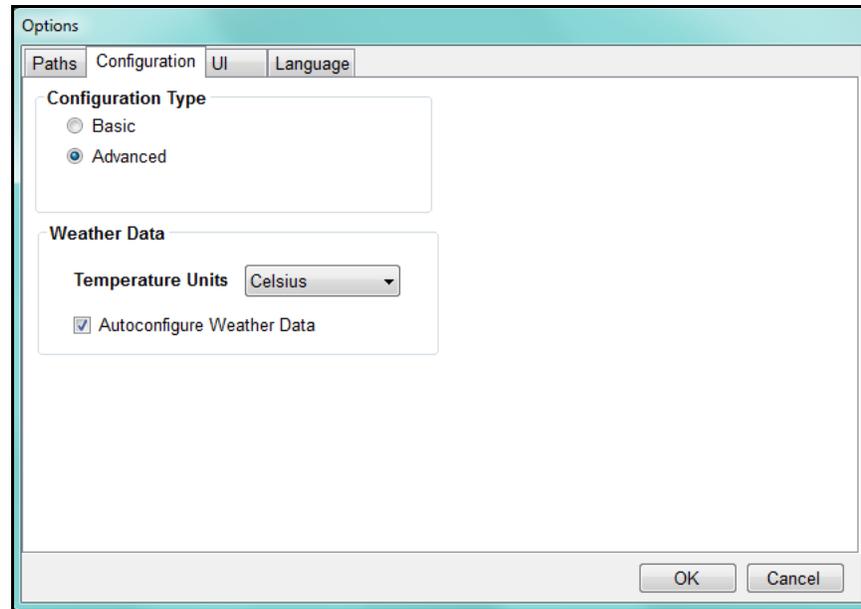
Settings Editor settings:

- **Pg Tools Path:** this is the path to the pg_tools exe, which is a utility used to archive, restore, and perform other maintenance operations on the database cluster. Click Browse to set up another location.
- **Default Archive Path:** this is the default location where the archive is stored when the database cluster is archived. Click Browse to select the location.

7.2.2: Configuration Setting

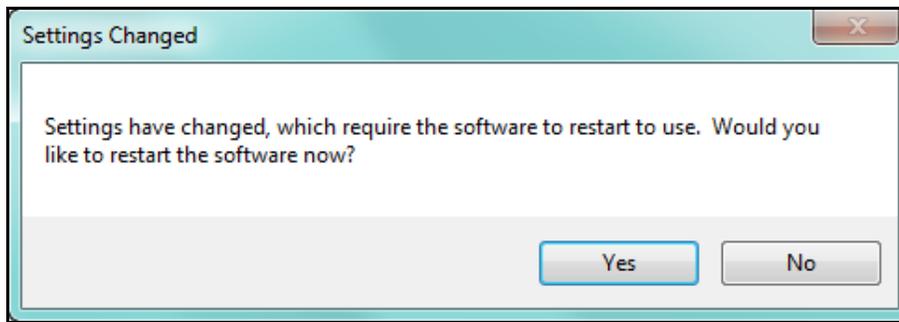
The settings are similar for the Dashboard Viewer and the Settings Editor. This setting controls what options are available to the user.

1. Click the Configuration tab. You will see the screen shown below from the Settings Editor. The Options screen from the Dashboard Viewer does not have the Autoconfigure Weather Data checkbox.



2. Click the radio button of the option you want to set:
 - Basic restricts access to functional billing tasks and provides a user friendly interface to configure settings.
 - Advanced provides access to all options, and should only be chosen for advanced users.
3. The Weather Data section lets you select Celsius or Fahrenheit from the pull-down menu.
4. The default Weather Data configuration is Auto-Configure. If you do not wish to automatically configure settings for weather data acquisition for new locations at the time they are first created, click on the Autoconfigure Weather Data button to disable this feature.

5. If you've made a change, when you click OK you will see this window.



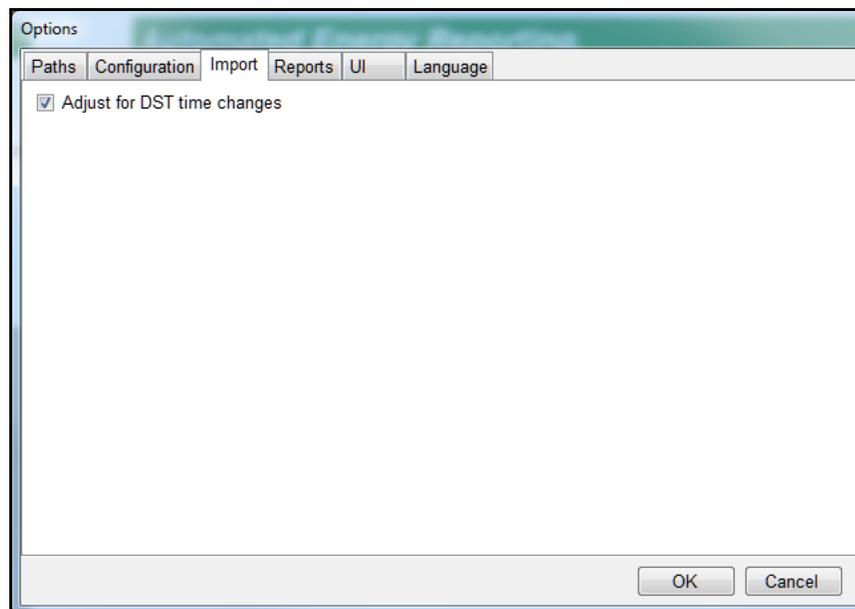
6. Click Yes to restart the EnergyReporterPQA^M software now; click No if you don't want to restart the software.

NOTE: Changes you make won't take effect until you restart the software.

7.2.3: Import

The Settings Editor's Option screen has a tab labeled Import. It lets you configure the application to take Daylight Savings Time (DST) into account.

1. From the Settings Editor Option screen, click the Import tab.



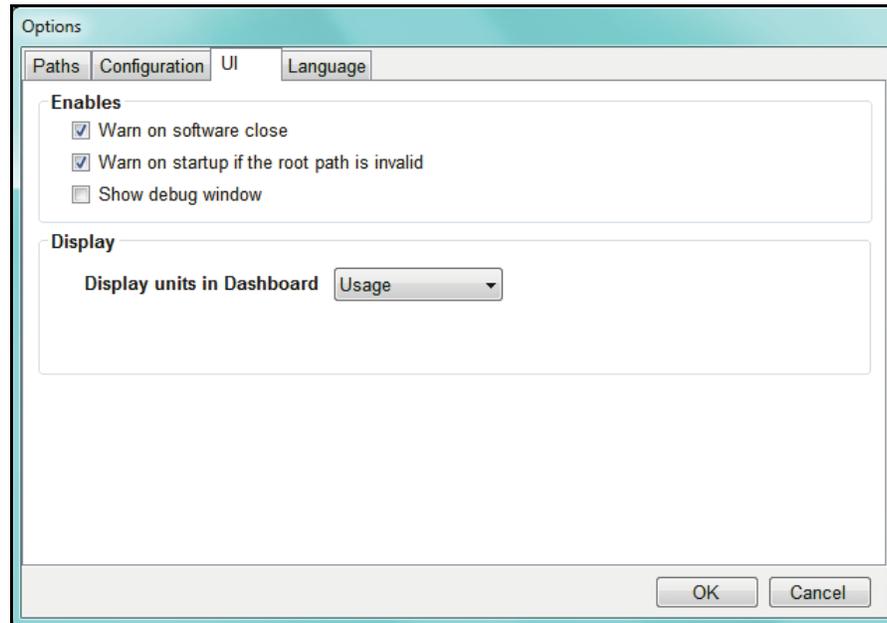
2. If you want the billing and reporting data to adjust for DST time changes, check the box.

3. Click OK to close the screen and apply your settings.

7.2.4: UI (User Interface) Setting

Except for one setting, the Dashboard Viewer and Settings Editor Option screens have the same UI settings.

1. Click the UI tab. The screen shown below is from the Dashboard Viewer. The Options screen from the Settings Editor does not have Display option.



2. These are the setting options:

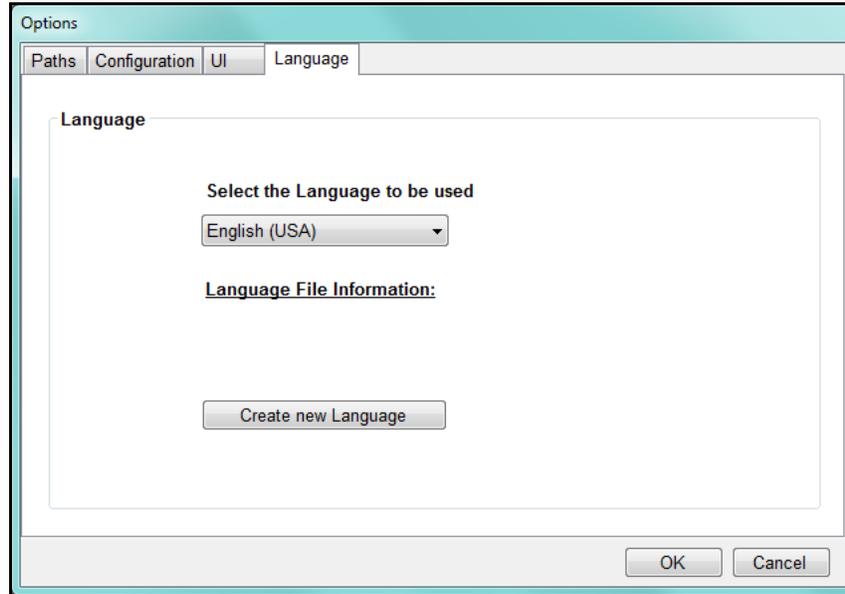
- Warn on software close: this setting asks the user to confirm closing the software. The default of the setting is checked - selected. To un-select the setting click on the checkbox to remove the checkmark.
- Warn on startup if the root path is invalid: this setting verifies that the database server has been configured correctly and is accessible. The default of the setting is checked - selected. To un-select the setting click on the checkbox to remove the checkmark (this is not recommended).
- Show debug window: click the checkbox to show the debug trace window while the software is running.
- Display units in Dashboard - select either Usage or Demand.

3. Click OK to close the screen and apply your settings.

7.2.5: Language

This feature allows you to select a translation of the software to use, as well as providing a tool that can be used to translate the software.

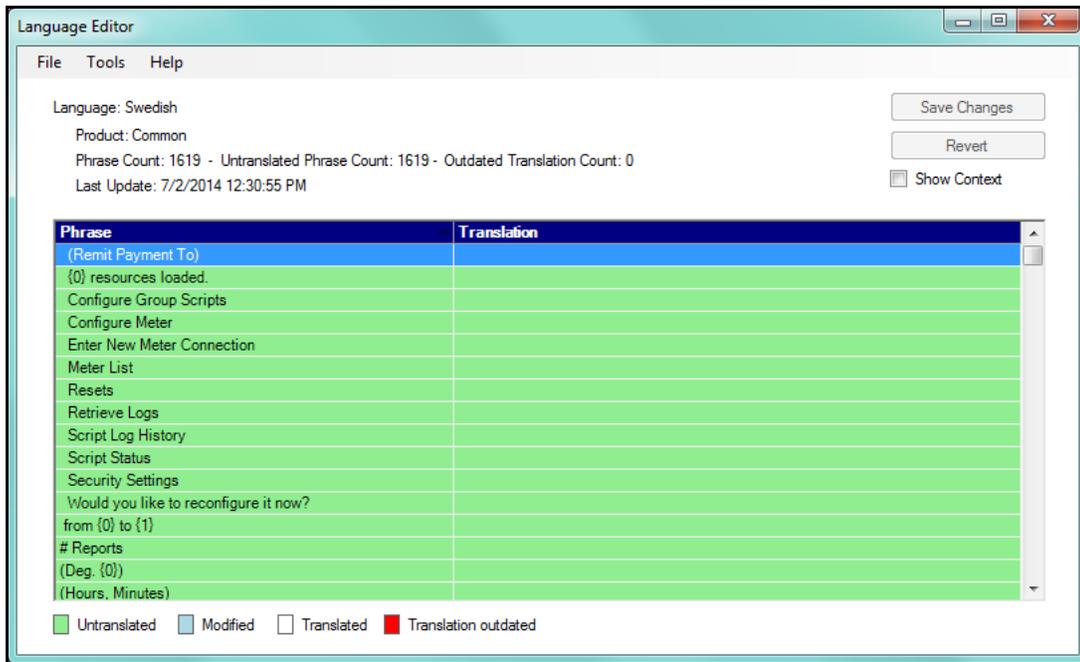
1. Click the Language tab from the Settings Editor or Dashboard Viewer Options screen.



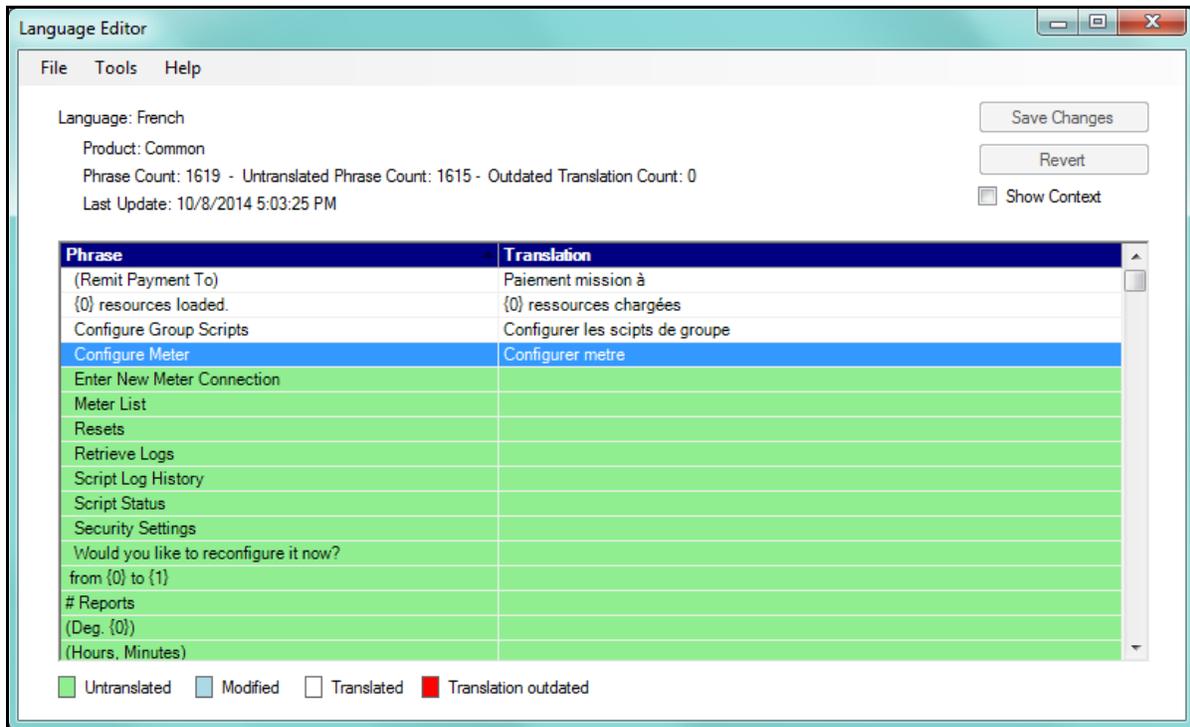
2. Select from the available languages from the pull-down menu. You can click Language File Information for details of the selected Language file.
3. To add a new translation, click the Create New Language button.



4. Enter the language name and click OK.

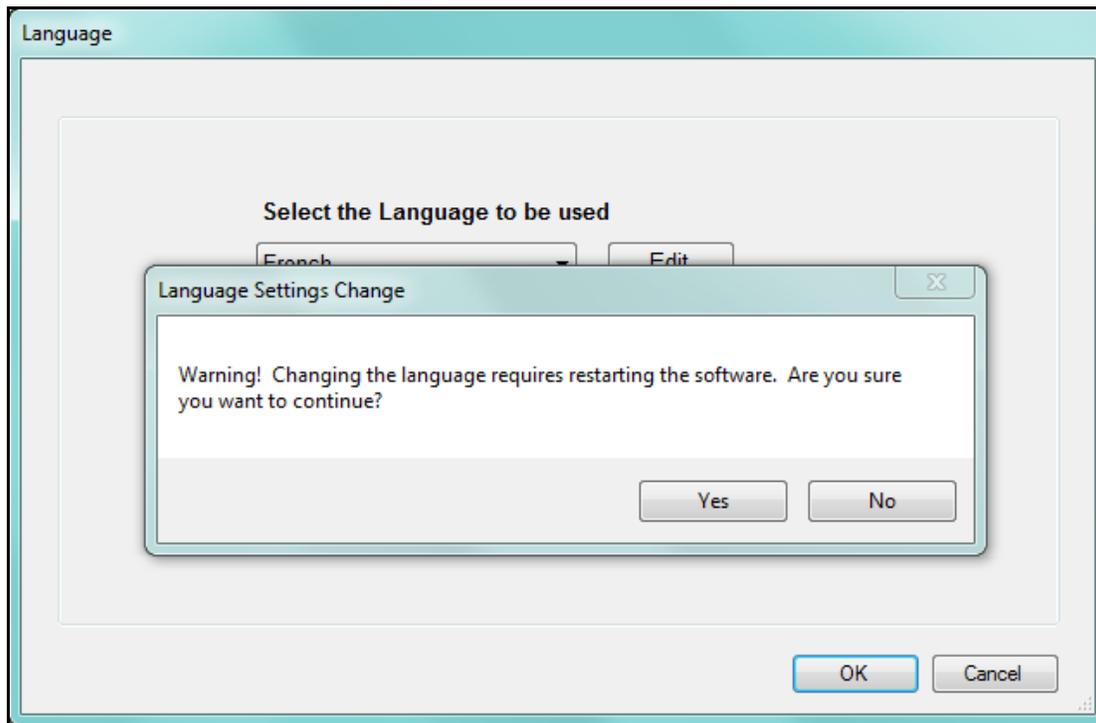


5. Use the screen shown above to enter the translations. You enter the translation in the Translation column for each term in the Phrase column. See the example screen on the next page.



6. When you have finished entering the translations, click Save Changes to save the language file.

7. The Language screen is redisplayed. Select the language you want to use from the pull-down menu and click OK. You will see the following confirmation window.



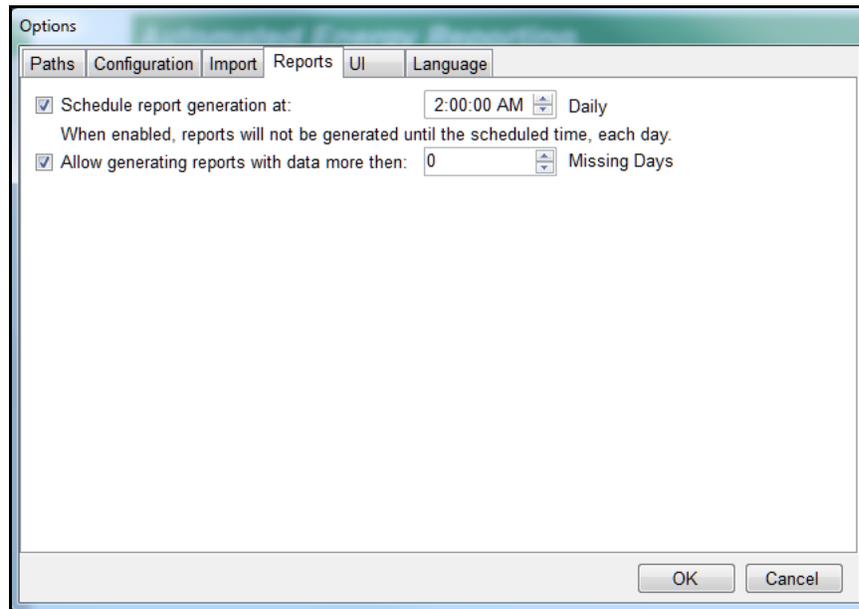
8. Click Yes. The software will shut down. Open it again to display the translated application.

7.2.6: Reports/Custom Reports

This feature gives you custom report options. The options from the Settings Editor and Dashboard Viewer are different.

7.2.6.1: Settings Editor: Reports

1. Click the Reports tab from the Settings Editor Options screen.



2. This screen gives you two options:

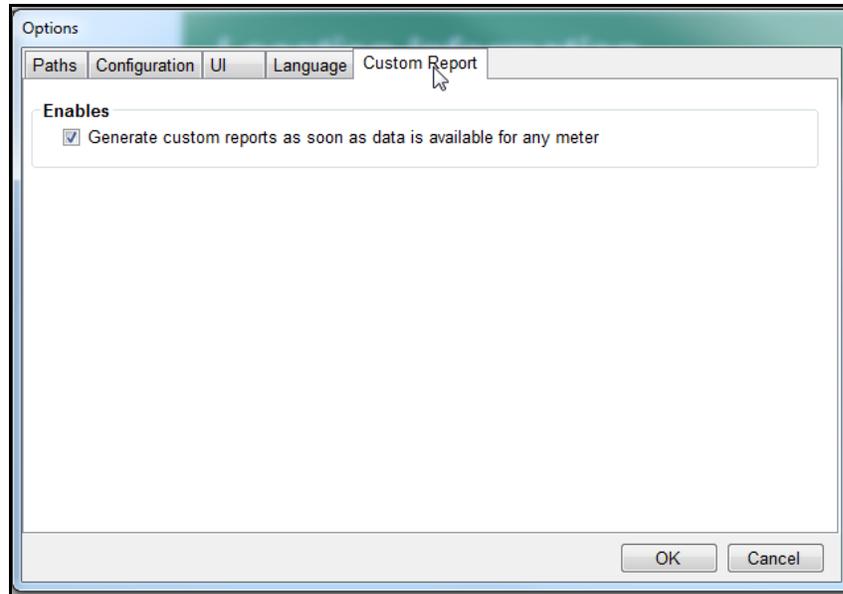
- Schedule report generation: when enabled (box checked and time selected), reports will not be generated between 11 PM and the scheduled report time. At the scheduled time, all pending reports will be generated. Between the scheduled report time and 11 PM, reports will be generated normally.
- Allow missing days: under normal operation, custom reports require all meters to have data for the entire report period. However, when meters are offline, you may want to have those reports generated anyway, knowing that the report will not contain data for those meters.

When allow missing days is enabled (box checked and number of days selected), custom reports will be generated even if a meter is missing more than the configured number of days of data. EIG recommends the number of days setting to be at least 2 days, to allow time for meters which are slow to retrieve logs and import data.

3. Click OK to close the screen and apply your settings.

7.2.6.2: Dashboard Viewer: Custom Reports

1. Click the Custom Reports tab from the Dashboard Viewer Options screen.



2. To have a Custom report generated as soon as data is available, click the checkbox.

3. Click OK to close the screen and apply your settings.

7.3: Performing Tasks Using Command Line

You can trigger an import of all meters or generate all bills from command line. This feature is used if you wish to launch the EnergyReporterPQA™ application from a third party application and have it run tasks. Using the command line, the EnergyReporter-PQA™ application can be embedded, as a launch command, into any third party application.

7.3.1: Import Data Using Command Line

This can be useful for automating the importing of data. The command you use is as follows:

```
"[Path]\BillSettingsEditor.Master.exe" --script --import meter=all
```

IMPORTANT!

- [Path] is the path to the application on your PC.
- You must include the quotation marks.

For example:

```
"C:\Program Files (x86)\Electro Industries\EnergyReporter EXT\BillSettingsEditor\BillSettings Editor.Master.exe" --script --import meter=all
```

7.3.2: Generate All Bills Using Command Line

This can be useful for automating the generation of bills. Make sure this runs after all the data for the month has been imported. The command you use is as follows:

```
"[Path]\BillViewer\BillViewer.exe" --script --generate_bill
```

IMPORTANT!

- [Path] is the path to the application on your PC.
- You must include the quotation marks.

For example:

```
"C:\Program Files (x86)\Electro Industries\EnergyReporter EXT\BillViewer\BillViewer.exe" --script --generate_bill
```

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A: Sample Usage Summary Report

EIG- Engineering
August, 2014 - Usage Summary Report



Usage Summary Report for EIG- Engineering – August 2014

This report provides a summary of the kWh usage for EIG- Engineering from Friday, August 01, 2014 to Sunday, August 31, 2014. This report was generated on Tuesday, October 07, 2014.

Meter Report

Each meter report contains 6 sub-reports:

1. Month Usage
Summarizes the usage of the meter over the course of August 2014, from 08/01/2014 00:00:00 to 08/31/2014 23:59:00. All values presented are the computed 15 minute interval values of the recorded commodity (kWh), summed over the specified interval. 4 values are presented:
 - a. Total Usage – The sum of all the 15 minute interval values over the period of the report.
 - b. Peak Usage – The peak 15 minute interval value over the period of the report.
 - c. Month Usage – A graph of the summed usage of each day during the period of the report.
 - d. Month Trend – A trend graph of the 15 minute interval values during the period of the report.
2. Peak Week Usage
Summarizes the usage of the meter over the course of the peak week during August 2014. The peak week is defined as the week containing the peak day. All values presented are the computed 15 minute interval values of the recorded commodity (kWh), summed over the specified interval. 4 values are presented:
 - a. Total Usage – The sum of all the 15 minute interval values over the period of the peak week.
 - b. Peak Usage – The peak 15 minute interval value over the period of the peak week.
 - c. Usage over the Week – A graph of the summed usage of each day during the peak week.
 - d. Trend over the Week – A trend graph of the 15 minute interval values during the peak week.
3. Peak Day Usage
Summarizes the usage of the meter over the course of the peak day during August 2014. The peak day is defined as the day which has the highest total usage. All values presented are the computed 15 minute interval values of the recorded commodity (kWh), summed over the specified interval. 3 values are presented:
 - a. Total Usage – The sum of all the 15 minute interval values during the peak day.
 - b. Peak Usage – The peak 15 minute interval value during the peak day.
 - c. Usage over the Day – A graph of the 15 minute interval values during the peak day.
4. Average Hourly and Daily Usage
Displays the average usage over the course of the month, averaged by hour, and by weekday. The highest and lowest usage for each hour and weekday over the course of the month are determined, and displayed as the bounding lines in Red and Green.
5. Comparison to previous Month and Year
Displays a comparison of daily usage between this month and last month, and this month this year and this month last year. The daily usage is lined up by week day for each month. The numbers at the bottom indicate what day in the month each bar represents: The top value is the current month, the bottom value the month being compared against.
6. Monthly Usage and Temperature
Displays a comparison of monthly usage and temperature. The highest and lowest temperature for each day over the course of the month are determined, and displayed as the bounding lines in Red and Green.

Description of Report Data

EIG- Engineering
August, 2014 - Usage Summary Report



Monthly Usage Summary

Customer EIG- Engineering
Month Date 08/01/2014 to 08/31/2014
Commodity kWh

Figure	Meter Location	Meter Name	Meter Type	Meter Serial	Total Usage	Peak Usage	Peak Demand
1	Main Building	Aggregated Meter	Aggregated Meter		17731	14	57
2	Main Building	1800ShamesDr	Shark 200	0123995130	17345	14	56
3	Main Building	Cubicle 1	Shark 200	0145324120	71	0	0
4	Main Building	Cubicle 2	Shark 200	0126370221	50	0	0
5	Main Building	Cubicle 3	Shark 200	0145324019	55	0	0
6	Main Building	Cubicle 4	Shark 200	0145324423	69	0	0
7	Main Building	Cubicle 5	Shark 200	0145324524	9	0	0
8	Main Building	Cubicle 6	Shark 200	0145282931	98	0	1
9	Main Building	Cubicle 7	Shark 200	0145324221	35	0	0

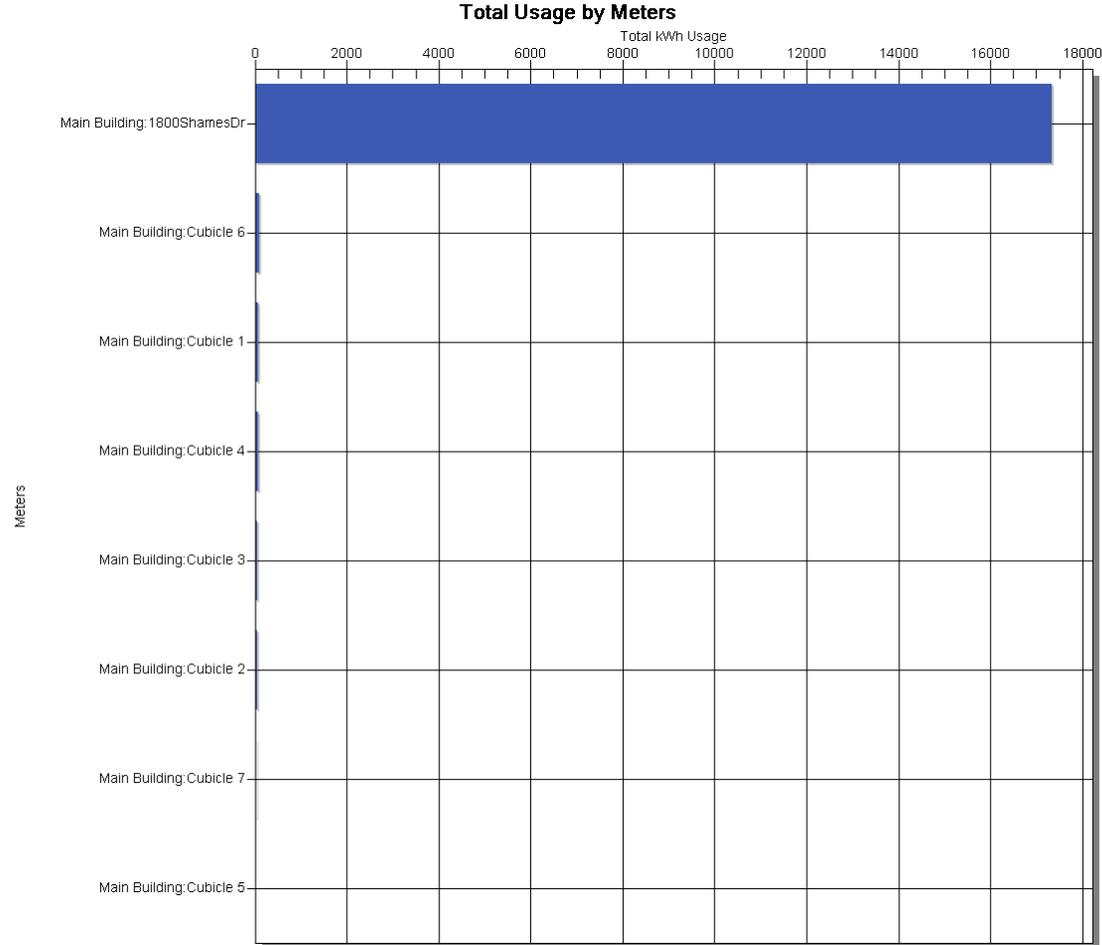
Summary of monthly usage for the aggregated meter, the building, and all individual meters

EIG- Engineering
August, 2014 - Usage Summary Report



Highest Usage Meter Comparison

Customer EIG- Engineering
Commodity kWh
Highest Usage Meter Main Building:1800ShamesDr @ 17345
Lowest Usage Meter Main Building:Cubicle 5 @ 9
Top Usage Meters



Highest usage comparison for the building and each meter

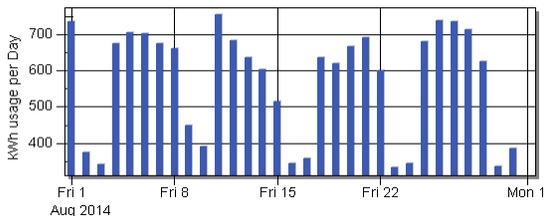
EIG- Engineering
 August, 2014 - Usage Summary Report



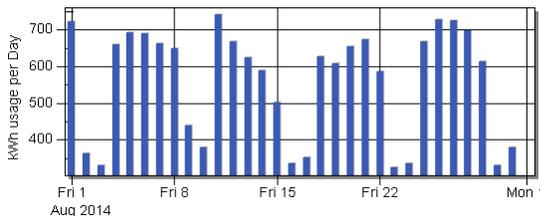
Monthly Usage at a Glance

Customer EIG- Engineering
 Month Date 08/01/2014 to 08/31/2014
 Commodity kWh

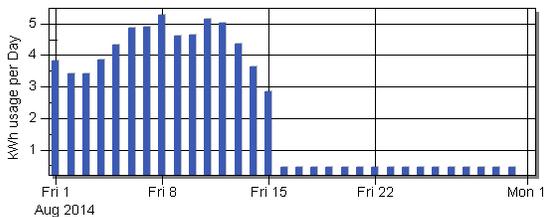
Main Building : Aggregated Meter 1



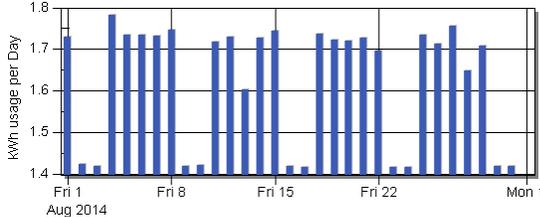
Main Building : 1800ShamesDr 2



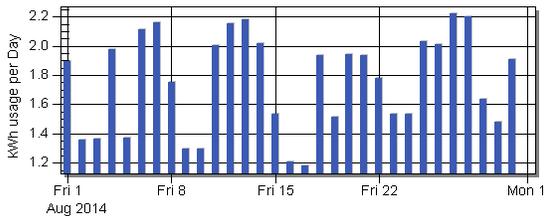
Main Building : Cubicle 1 3



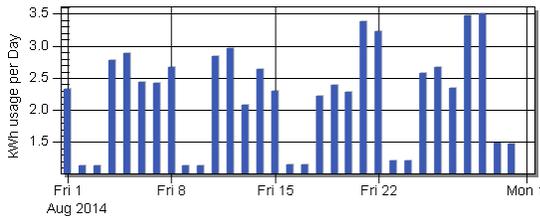
Main Building : Cubicle 2 4



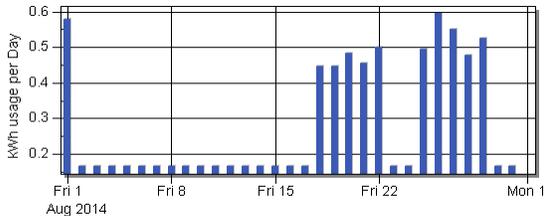
Main Building : Cubicle 3 5



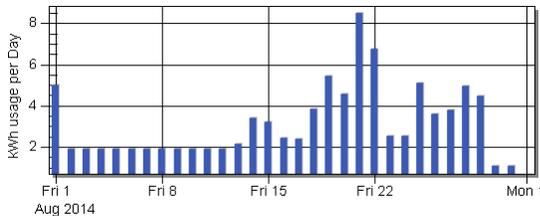
Main Building : Cubicle 4 6



Main Building : Cubicle 5 7



Main Building : Cubicle 6 8



Monthly usage for the aggregated meter and all individual meters

EIG- Engineering
August, 2014 - Usage Summary Report

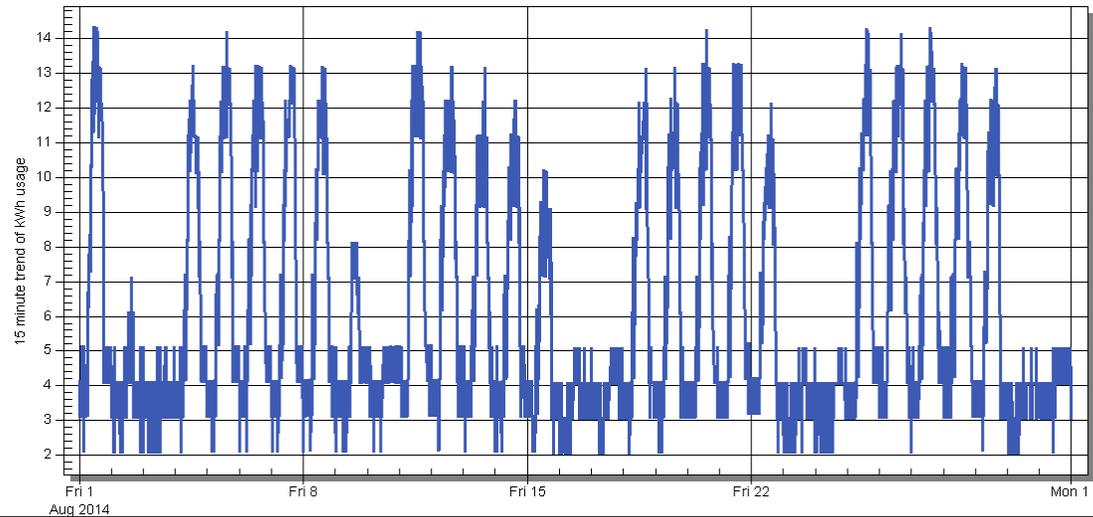
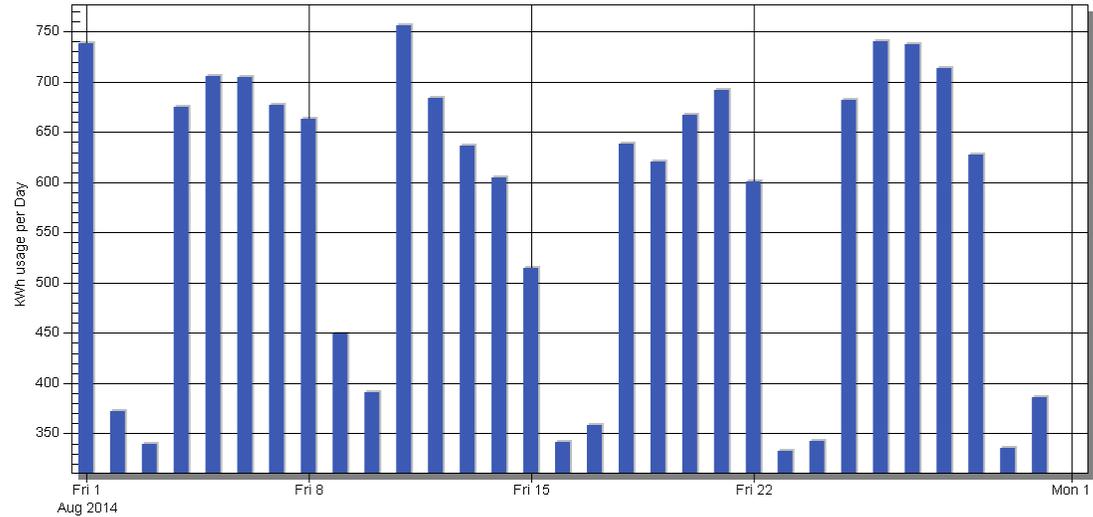


Main Building : Aggregated Meter

Total Usage during Month
08/01/2014 to 08/31/2014

Total Usage	17731
Peak Usage	14
Peak Demand	57

Figure 1.1



Aggregated Meter Total usage during month

EIG- Engineering
August, 2014 - Usage Summary Report



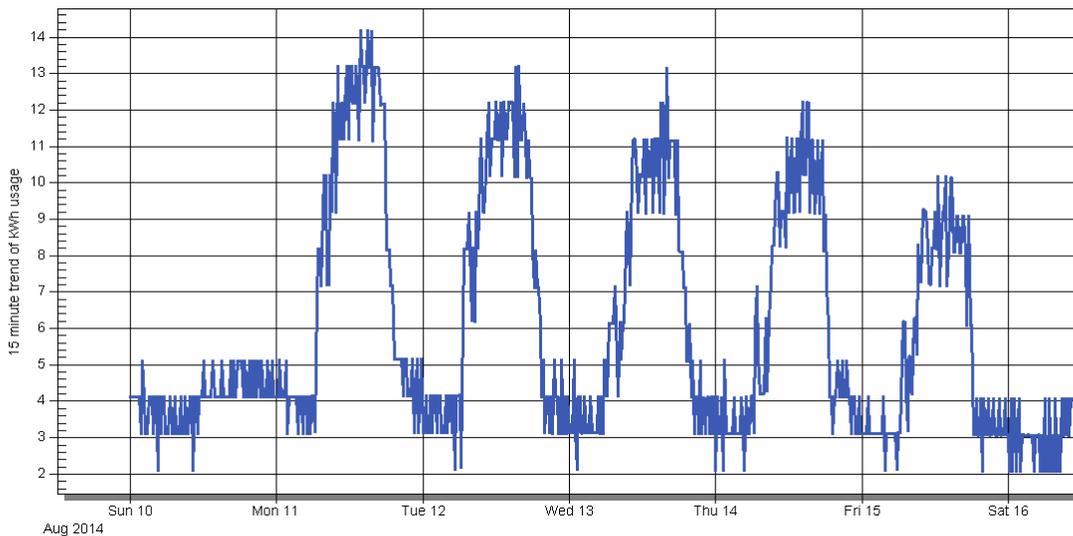
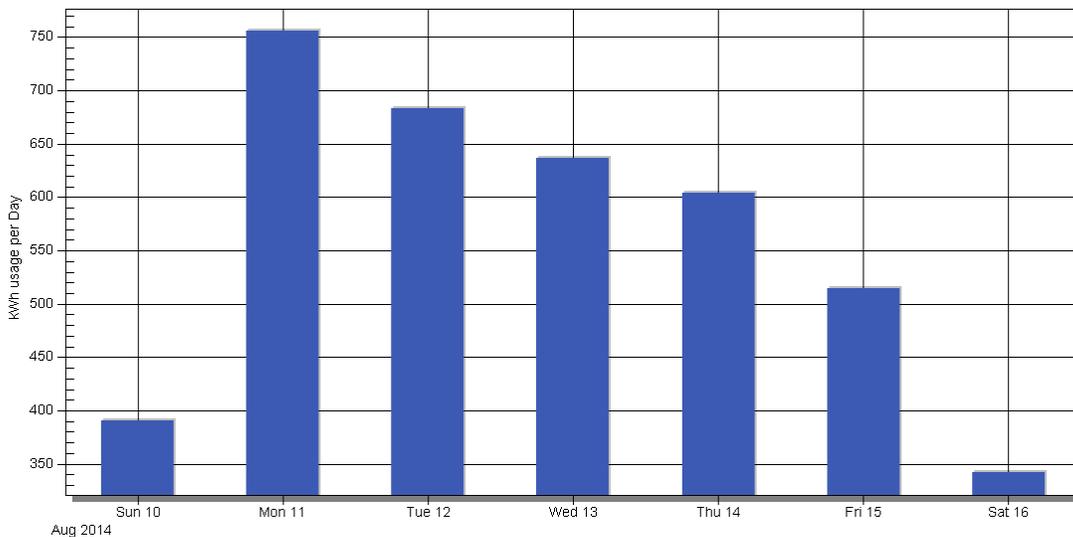
Main Building : Aggregated Meter

Total Usage during Peak Week

08/10/2014 to 08/16/2014

Total Usage 3929
Peak Usage 14

Figure 1.2



Aggregated Meter Total usage during Peak week

EIG- Engineering
August, 2014 - Usage Summary Report



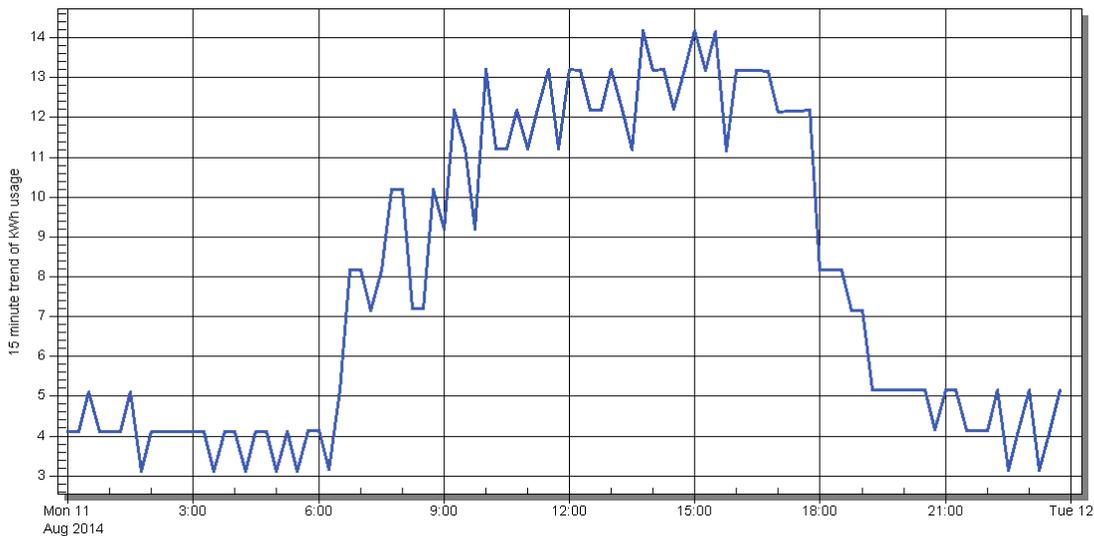
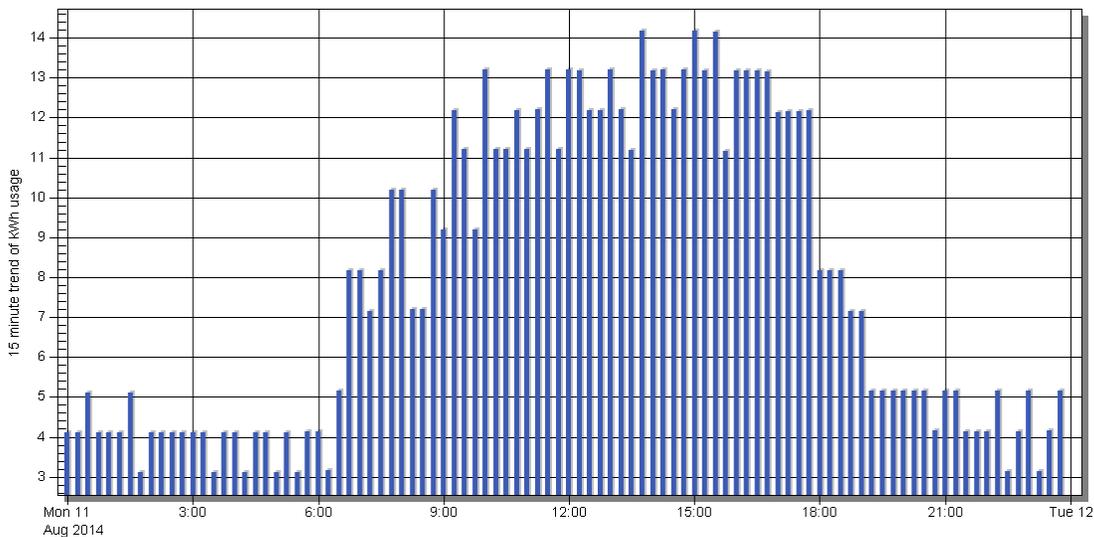
Main Building : Aggregated Meter

Total Usage during Peak Day

Monday, August 11, 2014

Total Usage	756
Peak Usage	14

Figure 1.3



Aggregated Meter Total usage during Peak day

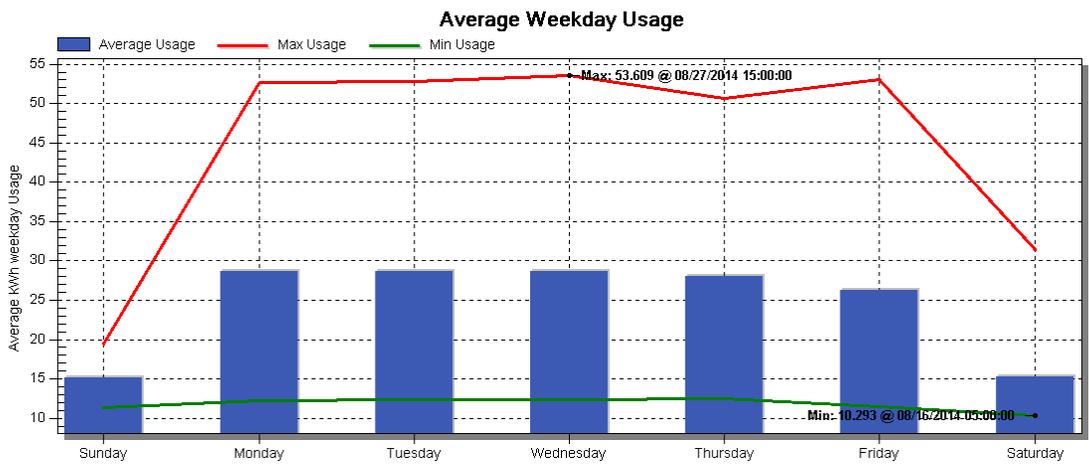
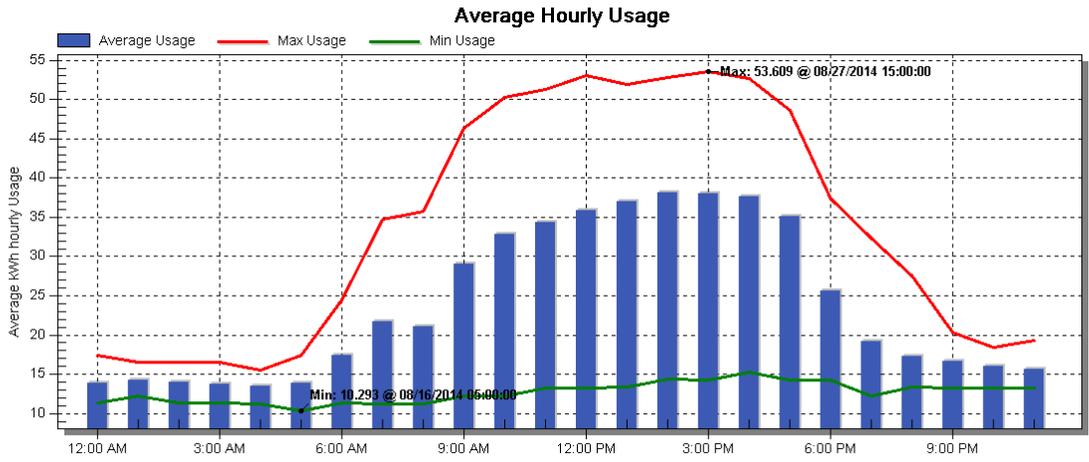


Main Building : Aggregated Meter

Average Hourly and Daily Usage

Displays the average usage over the course of the month, averaged by hour, and by weekday. The highest and lowest usage for each hour and weekday over the course of the month are determined, and displayed as the bounding lines in Red and Green.

Figure 1.4



Aggregated Meter Average hourly and daily usage

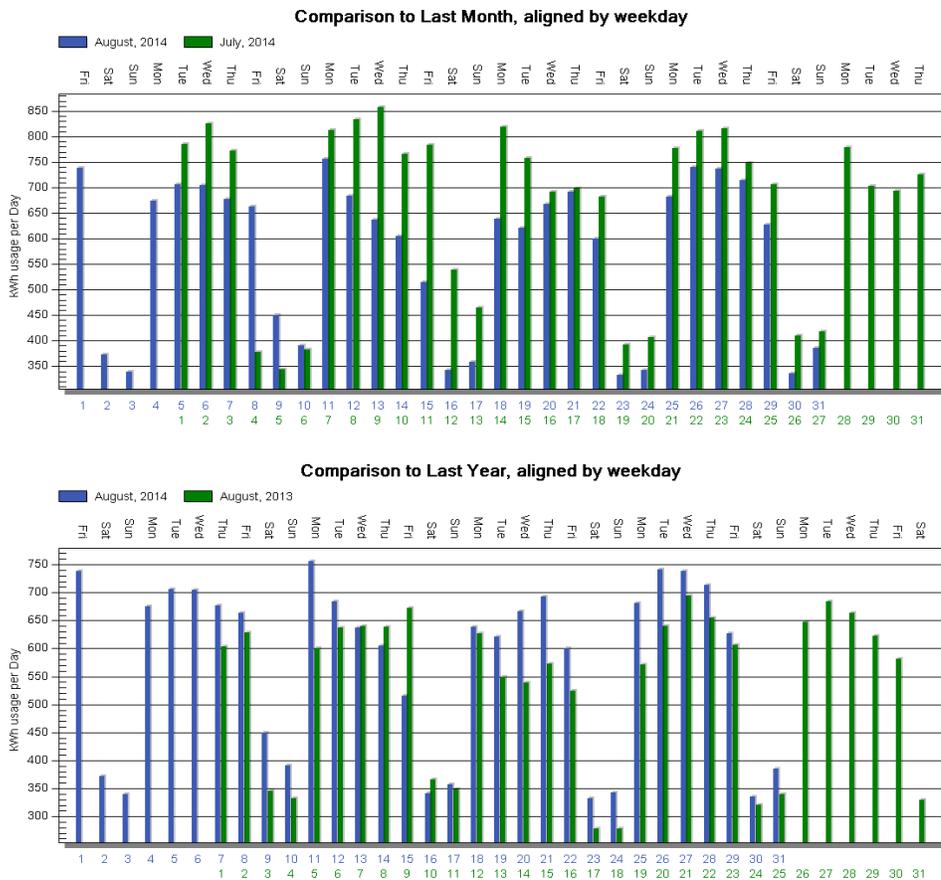


Main Building : Aggregated Meter

Comparison to previous Month and Year

Displays a comparison of daily usage between this month and last month, and this month this year and this month last year. The daily usage is lined up by week day for each month. The numbers at the bottom indicate what day in the month each bar represents: The top value is the current month, the bottom value the month being compared against.

Figure 1.5



ABC Utility
1800 Shames Drive, Westbury, NY 11590,

Aggregated Meter Usage comparison to previous month and year

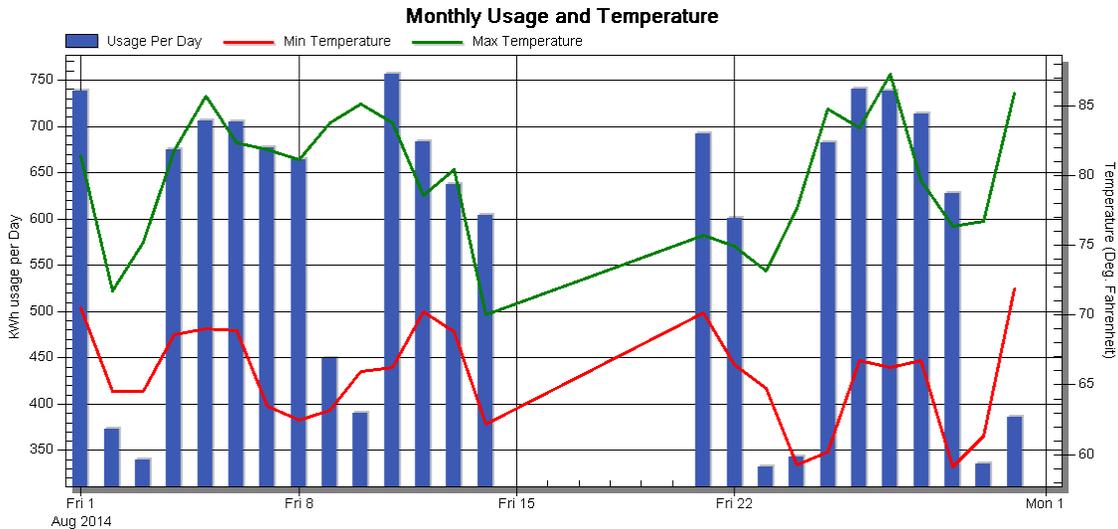
EIG- Engineering
August, 2014 - Usage Summary Report



Main Building : Aggregated Meter Monthly Usage and Temperature

Displays a comparison of monthly usage and temperature. The highest and lowest temperature for each day over the course of the month are determined, and displayed as the bounding lines in Red and Green.

Figure 1.6



Aggregated Meter Monthly usage compared to temperature

EIG- Engineering
August, 2014 - Usage Summary Report

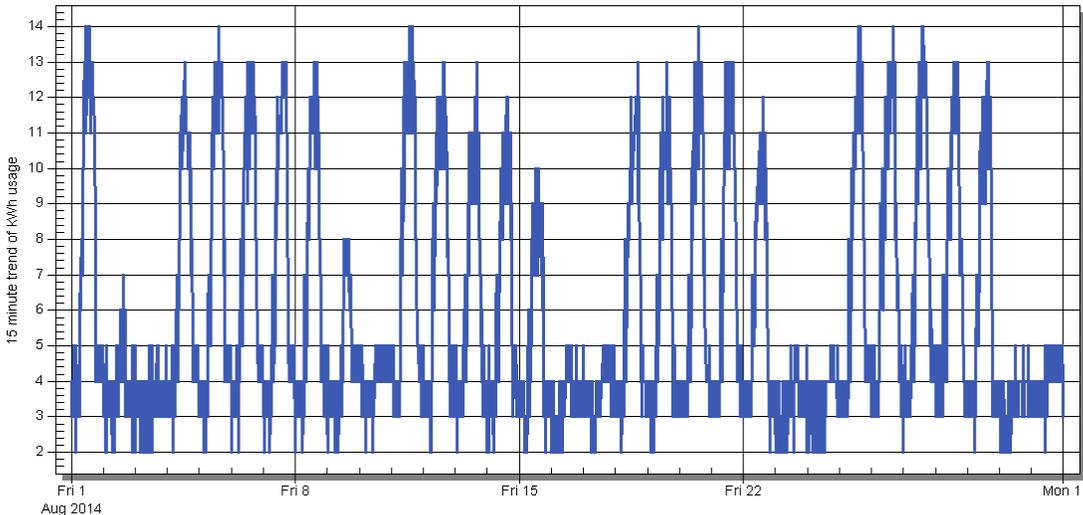
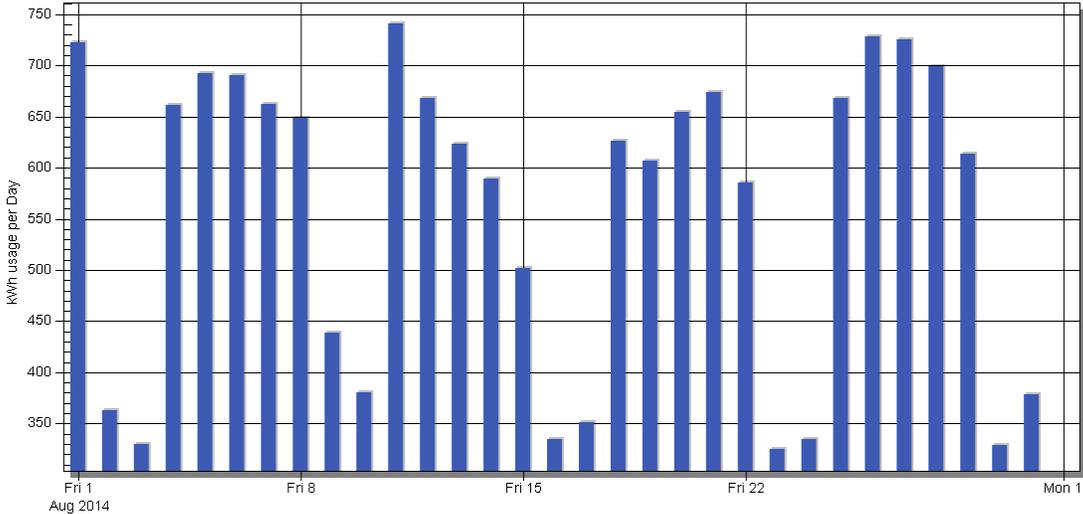


Main Building : 1800ShamesDr

Total Usage during Month
08/01/2014 to 08/31/2014

Total Usage	17345
Peak Usage	14
Peak Demand	56

Figure 2.1



Main Building Total usage during month

EIG- Engineering
 August, 2014 - Usage Summary Report

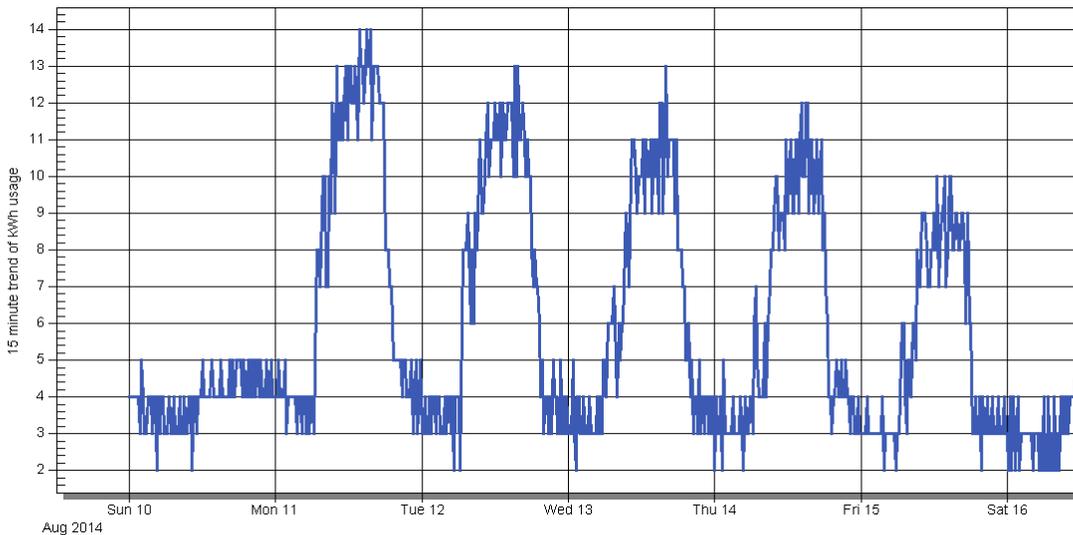
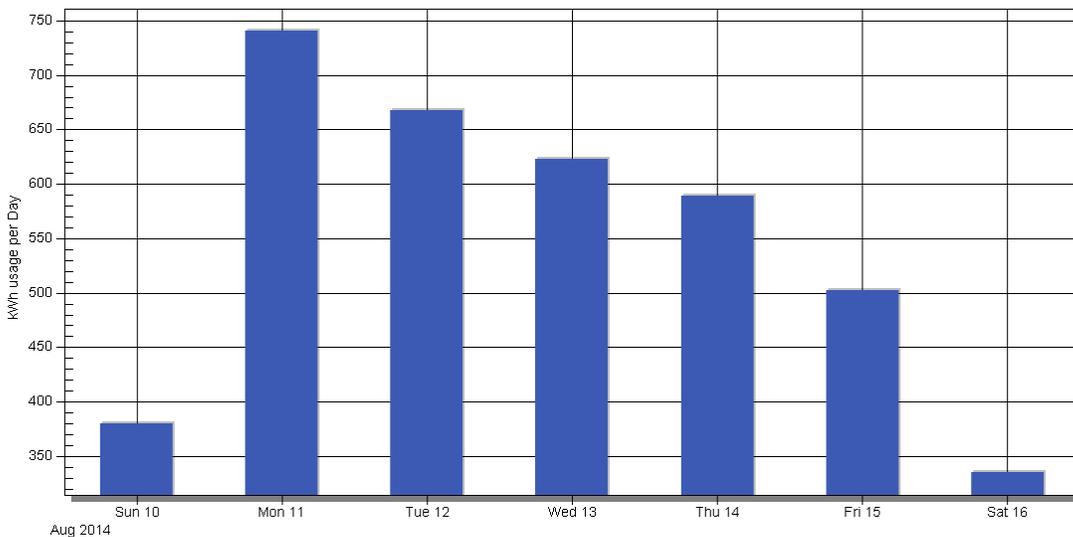


Main Building : 1800ShamesDr

Total Usage during Peak Week
 08/10/2014 to 08/16/2014

Total Usage 3838
 Peak Usage 14

Figure 2.2



Main Building Total usage during Peak week

EIG- Engineering
August, 2014 - Usage Summary Report

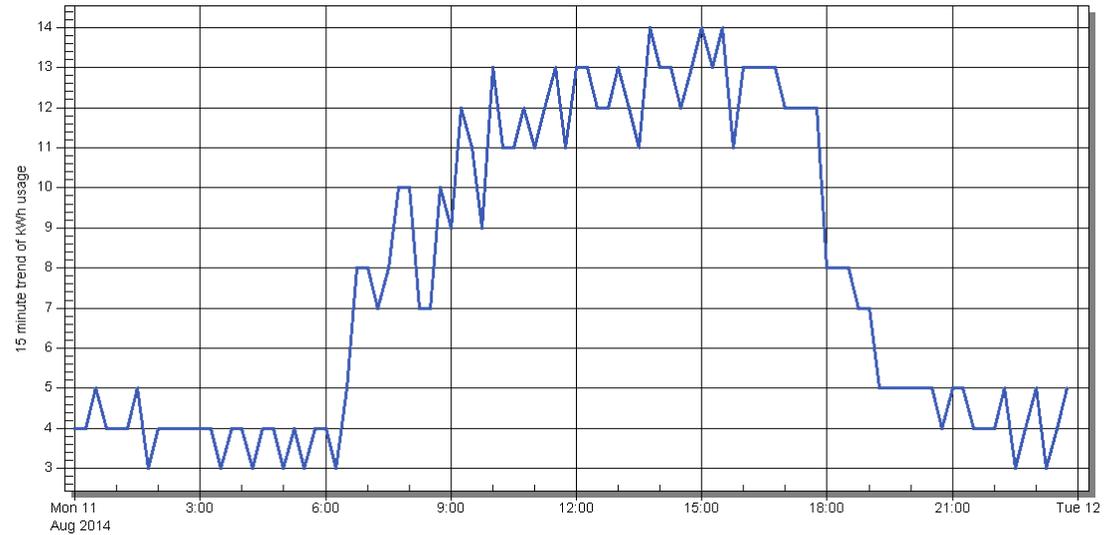
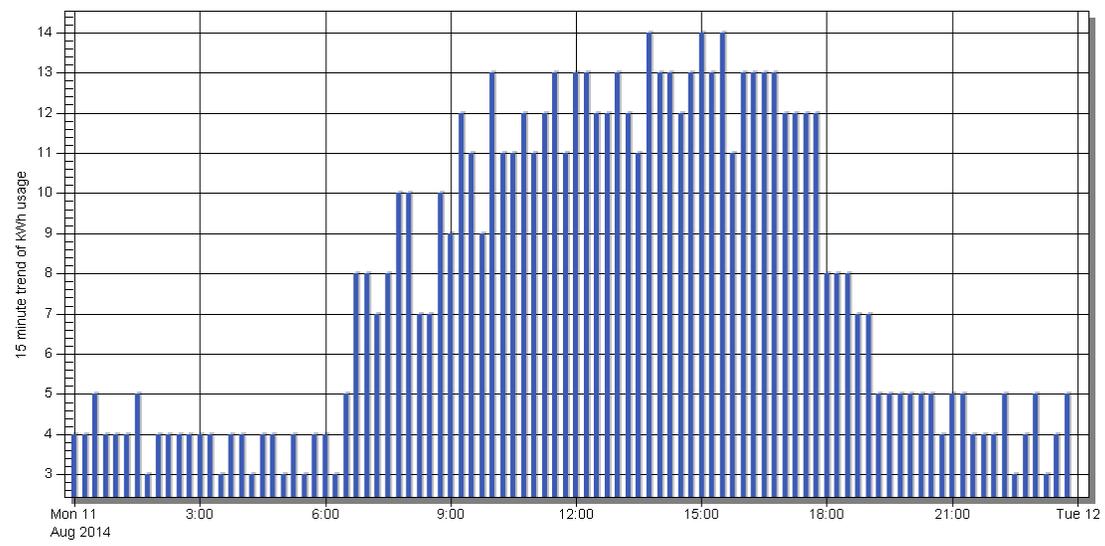


Main Building : 1800ShamesDr

Total Usage during Peak Day
Monday, August 11, 2014

Total Usage 741
Peak Usage 14

Figure 2.3



Main Building Total usage during Peak day

EIG- Engineering
 August, 2014 - Usage Summary Report

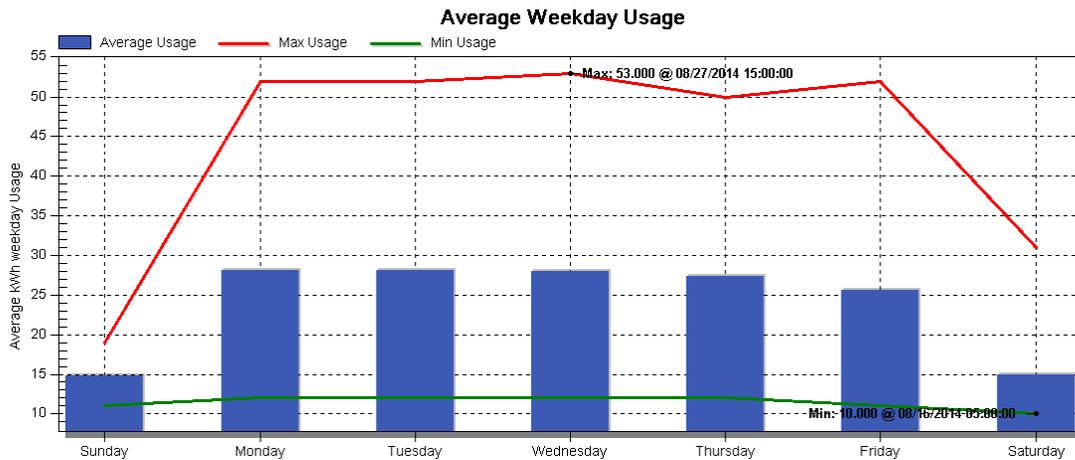
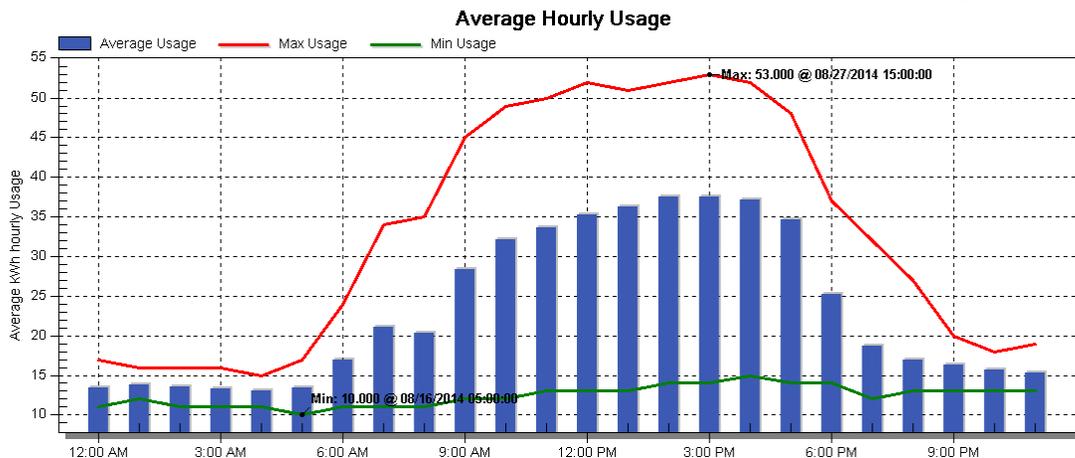


Main Building : 1800ShamesDr

Average Hourly and Daily Usage

Displays the average usage over the course of the month, averaged by hour, and by weekday. The highest and lowest usage for each hour and weekday over the course of the month are determined, and displayed as the bounding lines in Red and Green.

Figure 2.4



Main Building Average hourly and daily usage

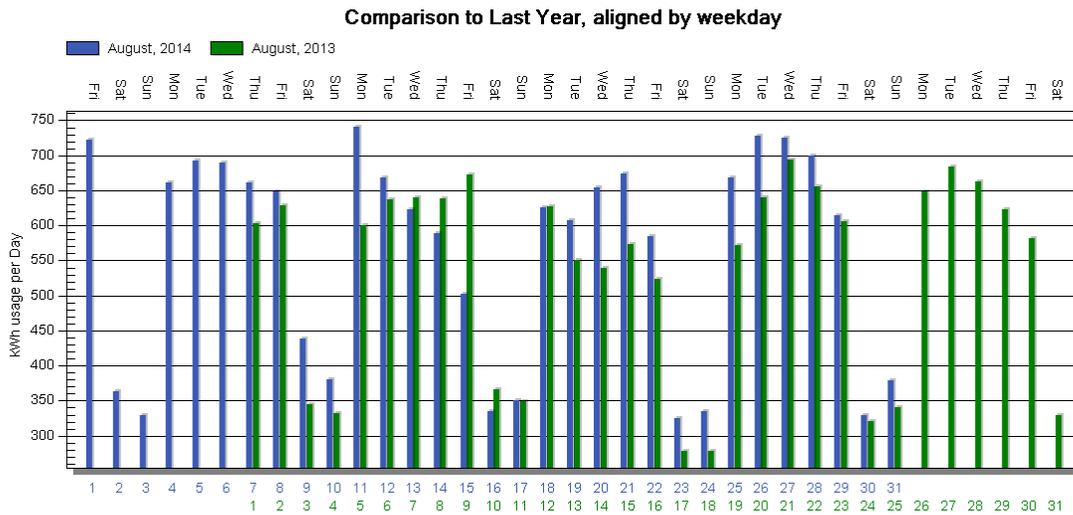
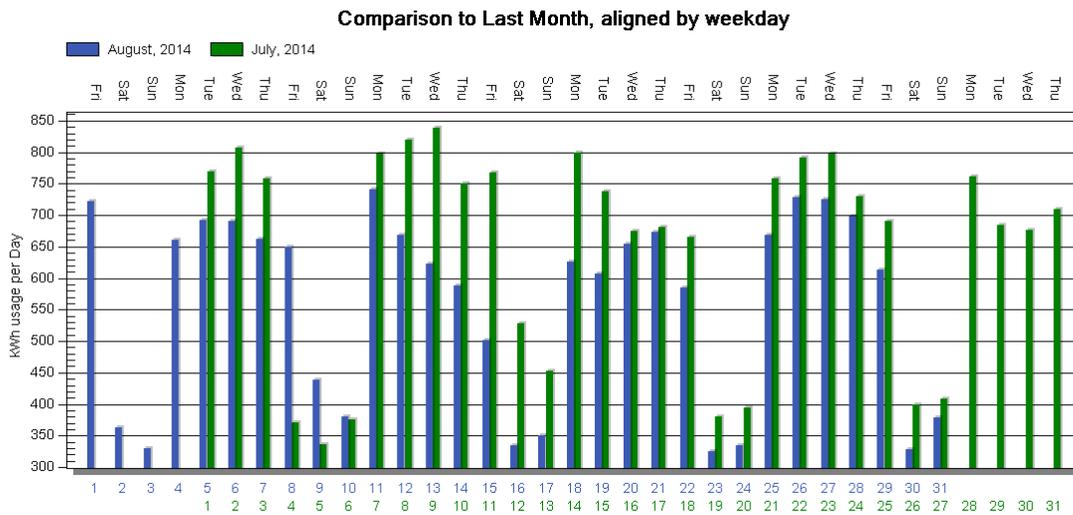


Main Building : 1800ShamesDr

Comparison to previous Month and Year

Displays a comparison of daily usage between this month and last month, and this month this year and this month last year. The daily usage is lined up by week day for each month. The numbers at the bottom indicate what day in the month each bar represents: The top value is the current month, the bottom value the month being compared against.

Figure 2.5



Main Building Comparison the previous month and year

EIG- Engineering
 August, 2014 - Usage Summary Report

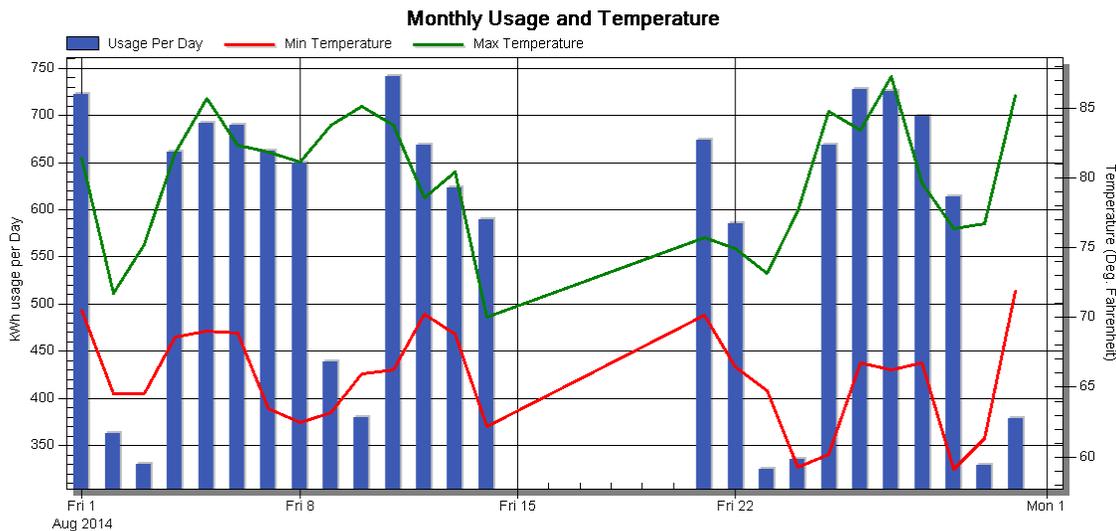


Main Building : 1800ShamesDr

Monthly Usage and Temperature

Displays a comparison of monthly usage and temperature. The highest and lowest temperature for each day over the course of the month are determined, and displayed as the bounding lines in Red and Green.

Figure 2.6



Main Building Monthly usage compared to temperature

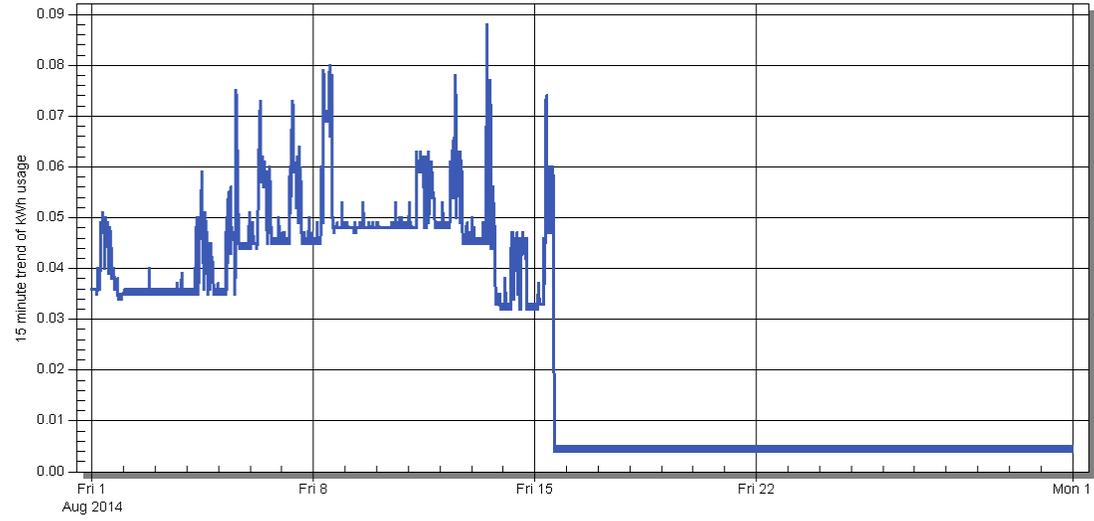
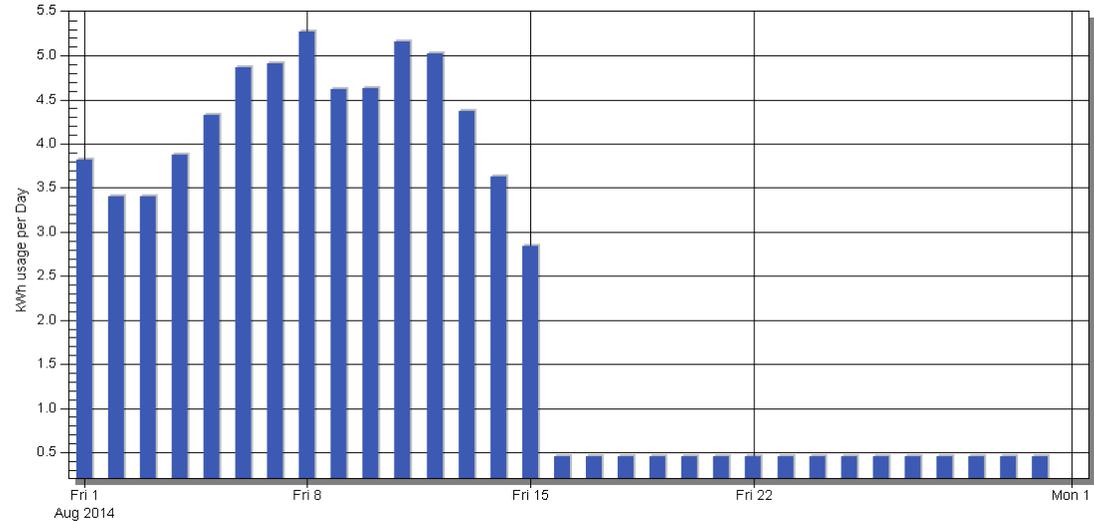


Main Building : Cubicle 1

Total Usage during Month
08/01/2014 to 08/31/2014

Total Usage	71
Peak Usage	0
Peak Demand	0

Figure 3.1



Meter 1 Total usage during month

EIG- Engineering
August, 2014 - Usage Summary Report

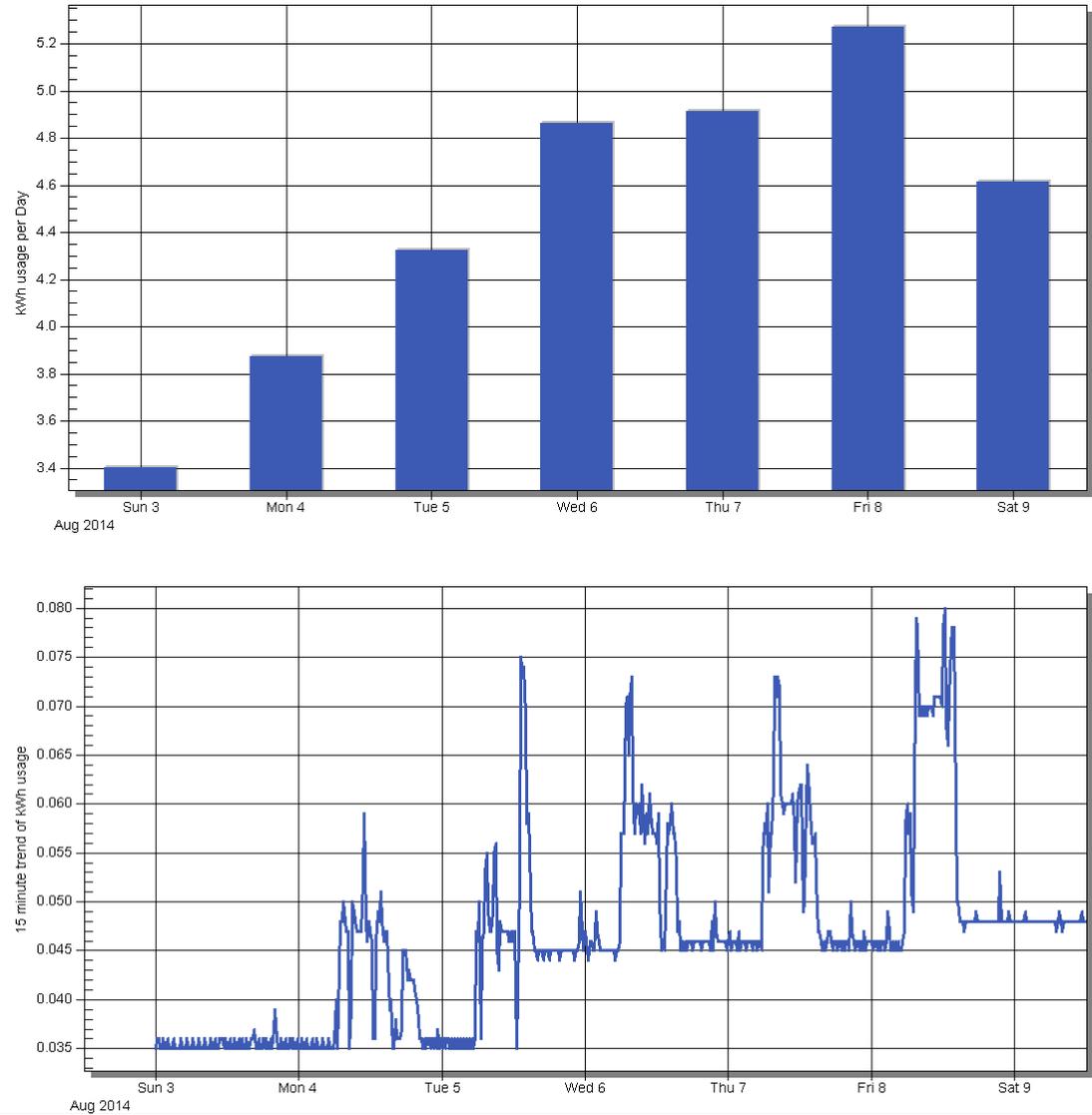


Main Building : Cubicle 1

Total Usage during Peak Week
08/03/2014 to 08/09/2014

Total Usage 31
Peak Usage 0

Figure 3.2



Meter 1 Total usage during Peak week

August, 2014 - Usage Summary Report



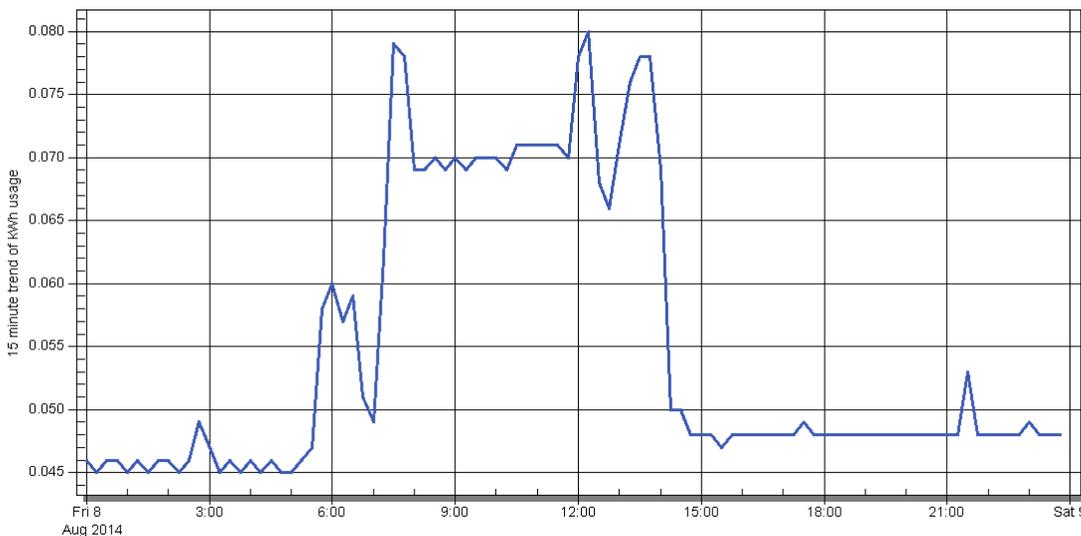
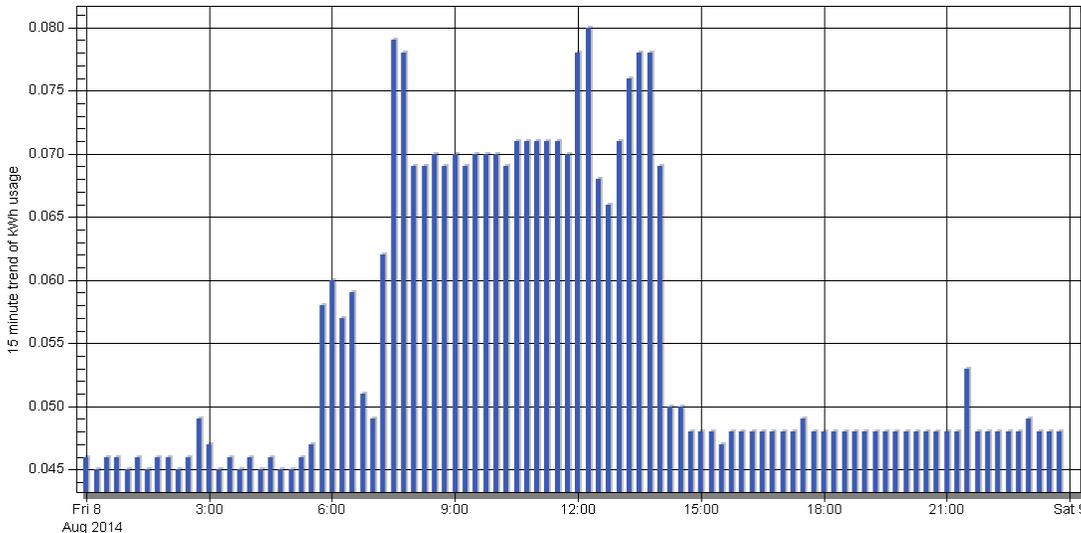
Main Building : Cubicle 1

Total Usage during Peak Day

Friday, August 08, 2014

Total Usage	5
Peak Usage	0

Figure 3.3



Meter 1 Total usage during Peak day

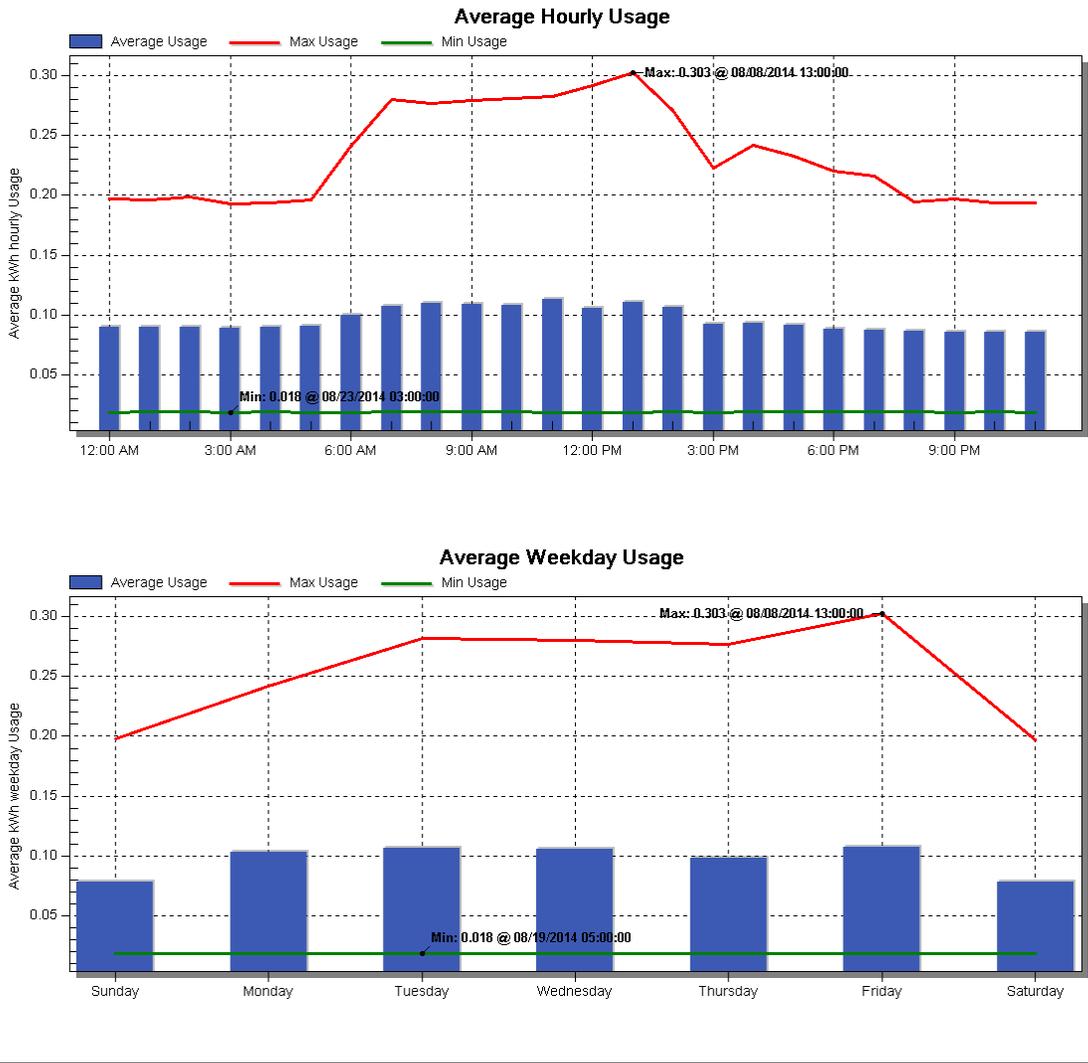


Main Building : Cubicle 1

Average Hourly and Daily Usage

Displays the average usage over the course of the month, averaged by hour, and by weekday. The highest and lowest usage for each hour and weekday over the course of the month are determined, and displayed as the bounding lines in Red and Green.

Figure 3.4



Meter 1 Average hourly and daily usage

EIG- Engineering
 August, 2014 - Usage Summary Report

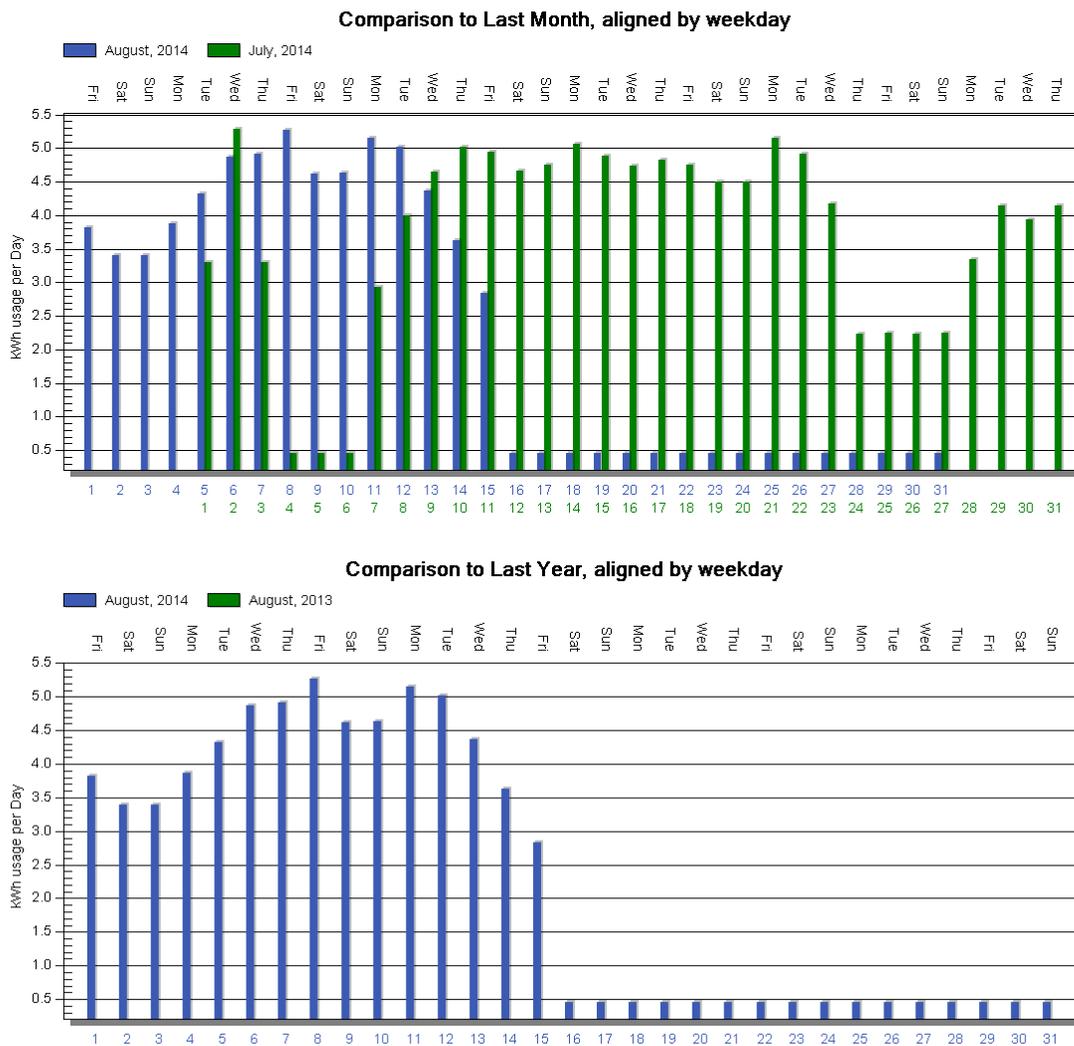


Main Building : Cubicle 1

Comparison to previous Month and Year

Displays a comparison of daily usage between this month and last month, and this month this year and this month last year. The daily usage is lined up by week day for each month. The numbers at the bottom indicate what day in the month each bar represents: The top value is the current month, the bottom value the month being compared against.

Figure 3.5



Meter 1 Usage comparison to previous month and year

EIG- Engineering
 August, 2014 - Usage Summary Report

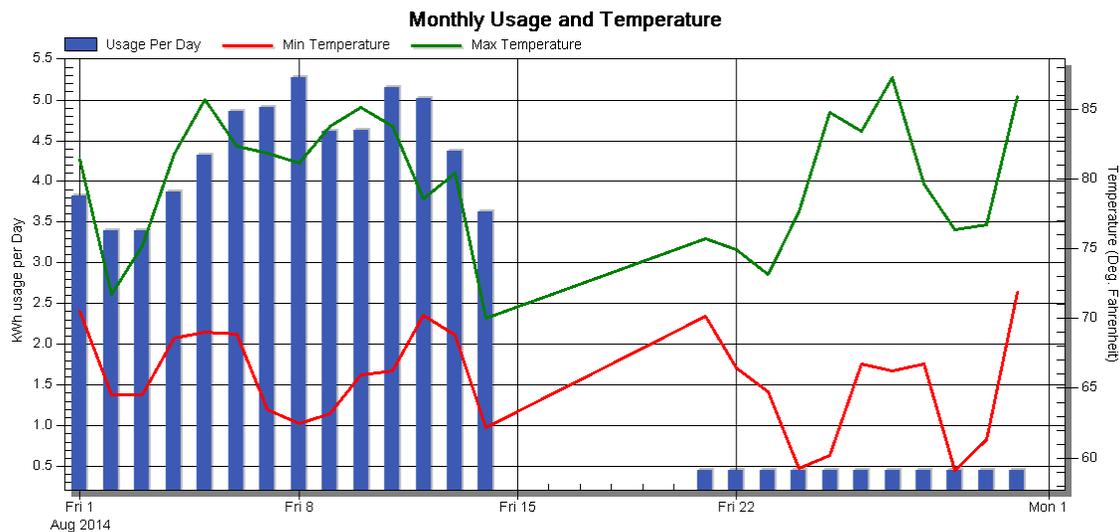


Main Building : Cubicle 1

Monthly Usage and Temperature

Displays a comparison of monthly usage and temperature. The highest and lowest temperature for each day over the course of the month are determined, and displayed as the bounding lines in Red and Green.

Figure 3.6



Meter 1 Monthly Usage compared to temperature

After this, the same graphs are shown for the remaining meters.

Glossary

<pg_data>	The data directory for the PostgreSQL database cluster for the EnergyReporterPQA™ application. This is the "<Common Application Data>\Electro Industries\Server\PostgreSQL9.5\Data" directory.
<pg_exe>	The directory which contains the PostgreSQLDatabase Server executable. This is typically "<Program Files>\Electro Industries\Server\PostgreSQL\9.5".
CommunicatorPQA™ Application	The software application that is the main component of EIG's Energy Manager software suite. It is a complete energy management application for configuring EIG meters, viewing real time readings remotely, trending data, retrieving and viewing logs, viewing and analyzing power quality information, and performing forensic engineering analysis. The data used by EnergyReporterPQA™ application to analyze usage is provided by the CommunicatorPQA™ application.
Bill Structure	Another name for Rate Structure.
Billing Database	The internal storage on the database cluster which holds all the data imported from the meters.
Channel	A single type of data item, such as kWh or pulses.
Charge	A monetary value applied to the bill, outside of the normal usage. This includes things such as a peak demand charge, credits, and taxes.
Commodity	A type of channel (typically from Energy or accumulations) which is a usage value the software uses when computing the rates for a bill.

Customer	The person or organization which is receiving the bill. A customer may have multiple locations, each of which gets its own bill.
Dashboard Viewer	The EnergyReporterPQA™ software for generating bills, viewing bills, and trending the data values.
Database Cluster	The collection of databases which the Database Server provides access to. A database server may provide access to multiple database clusters.
Database Server	The combination of computer and process that provides the interface to the database cluster (currently PostgreSQL 9.5).
EnergyReporterPQA™ Application	The package of software which includes the Settings Editor, Dashboard Viewer, and the Database Server.
Import Location	The actual source of the data imported for the meter. This is typically a log file, such as an HMIPQA™ application .dbf file, or a CommunicatorPQA™ application .db log file. This file is scanned when imported, and new data is placed into the billing database.
Location	A single unit for which a bill is generated. Each location may have its own set of meters and rate structures.
Meter	A data monitoring unit, which acts as an import point for collecting usage data. Each meter may have multiple channels, but only one channel can be assigned to a commodity at a time. When multiple meters are at a single location, the matching usage values are aggregated when generating the bill.

MeterManagerPQA™ Application	A software application that works within the CommunicatorPQA™ application to handle and automate tasks for meters, simplifying meter management, especially for large meter installations. The MeterManagerPQA™ application also automates the Log Retrieval which is necessary to build the database for the EnergyReporterPQA™ application's usage reports and billing.
Off-Peak/On-Peak	Used for utility billing purposes, Off-Peak and On-Peak are designations applied to different times of the day so that utilities can bill at higher rates for times when energy is more expensive to produce. The EnergyReporterPQA™ application allows you to assign On-Peak and Off-Peak to different times of the day, for each season in a rate structure.
Provider	The person or organization which is providing the energy, sending the bill, and receiving payments.
Rate	The monetary value applied to the usage which occurs during specific periods.
Rate Structure	The collection of settings which determine what rates to apply to the usage values for a commodity. Includes calendar rates (such as on peak and off peak), holidays, and other charges.
Seasons	In the EnergyReporterPQA™ application, Seasons are periods of time in a calendar year to which different rates can be applied, e.g., Summer and Winter. Up to four seasons can be created in a rate structure.
Settings Editor	The EnergyReporterPQA™ software for administering the billing package, including location

configuration, data import, rate configuration, and modifying data values.

Software License Key

An alphanumeric sequence of characters that is typically used to enable software upgrades or installation. In the EnergyReporterPQA™ application, the software license key is used to enable full use of the application.